4.9 Production Processing

This section describes the Production Processing tools used by DAAC operators:

1. AutoSys/AutoXpert
2. ECS Quality Assurance (QA) Monitor

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4.9.1 AutoSys/AutoXpert

This section describes how the AutoSys and the AutoXpert packages are used by DAAC operations for production processing. The combination of the two packages is referred to as AutoSys/AutoXpert in the following description.

AutoSys is a job scheduling and management COTS product providing mainframe batch scheduling functionality in a distributed UNIX environment. AutoSys has three primary components: AutoSys database, Event Processor, and Remote Agent. The AutoSys database is the repository for all system events, and for all job, monitor, and report definitions. The Event Processor is AutoSys' scheduling engine. It continuously queries the AutoSys database for events to be processed and performs necessary job, resource, and fault management actions. The Remote Agent is a transient process initiated by the Event Processor to run a program on the client machine. It sends messages directly to the Data Server to indicate changes in states for the job (e.g., STARTING, SUCCESS, FAILURE).

AutoSys is embedded in the ECS PDPS software specifically to manage the execution of jobs on science processing computers. Jobs necessary for the execution of DPRs are created and organized into "job boxes," using a custom API named "Job Management" in the ECS PDPS software.

Operator interaction is limited to "force starting" failed jobs from the Ops Console or from the JobScape GUI and monitoring the progress of jobs from JobScape. Entire job boxes should be cancelled using the Planning Subsystem's Production Request Editor. Jobs should not be deleted using the AutoSys Job Definition GUI. This does not communicate with the PDPS database.

For uninterrupted processing, AutoSys supports automatic fault tolerance management via the High Availability option. In this configuration, multiple Event Servers (Primary and Secondary) and Event Processors (Primary and Shadow) can be setup for complete redundancy in case of anomalous situations such as hardware, software, or network problems.

AutoXpert, a companion tool for AutoSys, is an advanced graphical facility for monitoring jobs in AutoSys. Its components are HostScape, JobScape, and TimeScape. HostScape provides a view of the resources, showing active states of machines, Event Server(s), Event Processors(s), and jobs. JobScape presents a PERT-like view of job processing from a logical point of view. TimeScape presents a Gantt-like view of job processing from a temporal point of view. All three GUIs provide user configurable color codes via the X resources file for correlating unique colors to job and resource states.

AutoSys and AutoXpert are used to perform the operating functions listed in Table 4.9.1-1.

Table 4.9.1-1. ECS Operator Functions Performed using AutoSys/AutoXpert (1 of 3)

Operating Function	Command/Script or GUI	Description	When and Why to Use
Start the Event Processor(s)	Eventor	Starts the Event Processor (and optionally, the Shadow Event Processor).	To start the Event Processor(s). Normally, this would be done when the system is booted.*
Startup GUI Console Panel	/usr/ecs/<mode>/CUSTOM/bin/DPS/EcDpPrStartAutosys<mode><AutoSys Instance Id>	Launches AutoSys GUI Control Panel.	To launch Ops Console, HostScape, JobScape, and TimeScape GUIs.
Access database	Xql	Invokes direct Sybase database access utility to issue SQL commands.*	Used for troubleshooting purposes.*
Check overall system	Chk_auto_up	Check the overall health of the system including the environment, configuration files, Event Server(s), and Event Processor(s).	To determine the overall health of the system for troubleshooting purposes.
Control job execution	JobScape	The GUI provides a display of job's progress.	To monitor jobs.
Determine active and completed jobs	Ops Console	View the list of successfully completed jobs by selecting the **Jobs Completed** button.	To view the successfully completed jobs, which have been removed from AutoSys.
Generate report	Autorep	Generates detailed or summary format report of jobs	To report on the history of job processing.
Manage product license keys	Gatekeeper	Manages product license keys.	To manage product license keys.*
Manage security	Autosecure	Maintain Edit and Exec Superusers (Edit Superuser can edit any job definition, and Exec Superuser can execute any job and stop the Event Processor(s)).	To manage system security.*
Monitor and manage alarms	Alarm button from Ops Console, HostScape, JobScape, and TimeScape GUIs	View alarms, acknowledge them, and change the status.	To monitor and manage alarms.

Table 4.9.1-1. ECS Operator Functions Performed using AutoSys/AutoXpert (2 of 3)

Operating Function	Command/Script or GUI	Description	When and Why to Use
Monitor and manage jobs	Ops Console button from GUI Control Panel	Compact “Control Center” for monitoring jobs and sending events to jobs: (Kill Job, Force Start Job, On Hold, Off Hold). Can also Launch Alarm Manager and view reports on all events sent to a job.	To monitor and manage jobs. See Controlling Job Execution in this section.
Monitor job history	TimeScape button from GUI Control Panel	To see an overall view of processing for jobs running in AutoSys. However, jobs finishing successfully are removed, and jobs not ready to run are waiting outside of AutoSys. See: Determine active and completed jobs.	To monitor current jobs running.
Monitor jobs by Job Box	JobScape button from GUI Control Panel	Viewing the progress of jobs in the job box. Select a job and click the right mouse button to bring up an Event GUI.	To monitor status of a job.
Monitor resources	HostScape button from GUI Control Panel	Monitor machines, Event Server(s), Event Processor(s), and jobs.	To monitor resources and jobs. This GUI can also be used to check resource utilization to see if the processing load is being balanced across machines.
Perform synchronization between database and active/inactive jobs	Chase	Verifies what AutoSys thinks is running, is actually running.	This command is run as part of the Event Processor(s) startup, and should not have to be run manually.*
Print AutoSys configuration information	Autoflags	Prints AutoSys configuration information such as version and release number, database used, operating system, hostname, and hostid.	To retrieve necessary information to be supplied to the vendor for product license key generation.*

Table 4.9.1-1. ECS Operator Functions Performed using AutoSys/AutoXpert (3 of 3)

Operating Function	Command/Script or GUI	Description	When and Why to Use
Remove events	Archive_events	Removes events and alarms or job_runs information from the database.	This command is run automatically during the daily DB Maintenance cycle. *
Remove Remote Agent log files	Clean_files	*Deletes old Remote Agent log files from client machines, which have had jobs started on them.	This command is run automatically during the daily DB Maintenance cycle, and should not have to be run manually.*
Retrieve status of a job	Autostatus	Retrieves the status of a job.	To monitor job status.*
Send event	Send event from command line Send Event button from Ops Console	Sends an event to manage job execution, stop Event Processor(s), and cancel a scheduled event.	To stop the Event Processor(s), since everything else can be done from the GUIs.*
Verify machine	Autoping	Verifies both client and server machines are configured properly, and the client is functioning properly.	To verify a configured machine for troubleshooting purposes.
View job dependencies and conditions	Job_depends	Generates a detailed report about the dependencies and conditions of a job.	To view job dependencies and conditions.*
View job queue	Ops Console - Jobs Waiting Button	Used to view jobs in CQ_RELEASED, CQ_HOLD and JIL_FAILUR (either the job is already in AutoSys, or AutoSys environment variables are invalid) states by selecting the **Jobs Waiting** button.	Verify jobs have been queued or determine why a queued job was not released.
View successfully-completed jobs	Ops Console - Jobs Completed Button	Used to view jobs that have successfully completed and have been removed by Job Management from AutoSys.	Used to view list of jobs that have finished but are not in AutoSys.
View processing log files	Autolog	Viewing the Event Processor log file is an alternative to monitoring all jobs and events using the GUIs.	To monitor jobs, events, and alarms for troubleshooting purposes.*
*** Not generally used in normal operations**			

4.9.1.1 Quick Start Using Autosys/AutoXpert

To invoke AutoSys/AutoXpert, type from the command line prompt:

> >**$ECS_HOME/CUSTOM/utilities/EcDpPrAutosysStart <mode> <AutoSys Instance Id>**

Where:

<**mode**> is the ECS mode, which this AutoSys instance is associated with and

<**AutoSys Instance Id**> is the instance name of this AutoSys

This script sets the appropriate AutoSys environment variables and issues the **`autosc`** command to start the GUI Control Panel.

Refer to the 920-TDA-022 “Custom Code Configuration Parameters” documentation series, for a listing of the EcDpPrAutosysStart script.

AutoSys provides various scripts and executables for defining objects, checking system status, accessing the database, monitoring and reporting job status, defining custom calendars, recording sounds, generating license keys, and controlling system security (see *AutoSys User Manual*, Chapter 11 “Using AutoSys Commands”).

AutoXpert cannot be invoked by a command line interface. The AutoSys main screen has buttons to invoke the functions of AutoXpert.

4.9.1.2 AutoSys Main Screen

The AutoSys GUI Control Panel provides buttons for launching (bringing up) Ops Console, Job Definition, Calendars (not used), Monitor/Browser (not used), HostScape, JobScape, and TimeScape GUIs. Figure 4.9.1-1 provides a snapshot of the Control Panel GUI.

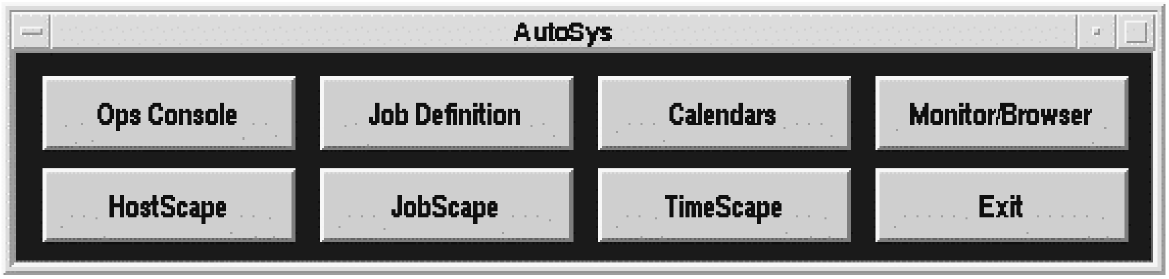


Figure 4.9.1-1. AutoSys GUI Control Panel

For more information about the AutoSys GUI Control Panel see the *AutoSys Users Manual*, Chapter 5 Defining AutoSys Jobs using the GUI.

4.9.1.2.1 AutoSys Ops Console

The AutoSys Ops Console GUI provides an interface to monitor jobs and alarms in real-time. The GUI provides a Job Selection Dialog for filtering jobs based on various parameters such as type, name, state, and machine. Detailed information about the selected job including starting conditions, dependent jobs, and reports can be viewed. In addition, there are buttons for launching Alarm Manager, Job Definition, and Send Event GUIs.

For more information about the AutoSys Ops Console please see the *AutoSys Users Manual*, Chapter 9 the Operator Console.

4.9.1.2.1.1 ECS-Added Functions to the AutoSys Ops Console

ECS has added the following three buttons to the AutoSys Ops Console:

Jobs Completed - When this button is selected a display similar to the following appears on the screen:

```
                    Jobs Completed


DPR ID                   COMPLETION STATE    PRIORITY  TYPE


MODPGE01#s02280100DEV04      SUCCESS              250      Routine

MODPGE02#s28010500DEV04      SUCCESS              250      OnDemand

MODPGE02#s28011000DEV04      FAILED               250      Reprocessing

MODPGE02#s28011500DEV04      SUCCESS              250      Routine

MODPGE02#s28012000DEV04      SUCCESS              250      Reprocessing

Jobs Completed: 5
Jobs Successful: 4
Jobs Failed: 1
```

These jobs have completed and have been removed from AutoSys so the database is optimally maintained to increase job throughput. Their completion state is indicated, as well as their Priority and Type. Totals are listed at the bottom as to how many jobs have been completed successfully or failed. Note: the Completion State, Priority and Type are highlighted and underlined: this means you can click these to get the list reordered by any of these fields.

Jobs Waiting - Select this button to display a list of jobs scheduled, but which are waiting for data. When all of the data is available for a job, jobs are released from this holding queue into AutoSys where they immediately start to execute. The display looks as follows:

```
                Jobs Waiting


DPR ID                   PGE ID           PRIORITY  TYPE       REASON


MODPGE01#s02280100DEV04  MODPGE01#syn1#001   250      Routine    Data

MODPGE02#s28010500DEV04  MODPGE02#syn1#001   250      OnDemand   Resources

MODPGE02#s28011000DEV04  MODPGE02#syn1#001   250      Reprocess  Resources

MODPGE02#s28011500DEV04  MODPGE02#syn1#002   250      Routine    Data

MODPGE02#s28012000DEV04  MODPGE02#syn1#001   250      Reprocess  Resources

Jobs Waiting: 5
Routine Jobs Waiting: 2
Reprocessing Jobs Waiting: 2
On Demand Jobs Waiting: 1
```

This display shows all jobs waiting to be released into AutoSys because they either do not have all their data available (Reason = Data) or there are not enough resources available for them to run (Reason = Resources). The DPR ID, PGE ID and Priority are all displayed, as well as the type of job (On Demand, Routine or Reprocessing). Note: the PGE ID, Priority, Type and Reason are highlighted and underlined: this means you can click these to get the list reordered by any of these fields.

Job Management Client Tool - The Job Management Client Program can be used to manually override the normal PDPS operations of creating jobs from information in the PDPS database and removing them after they have been successfully completed. *Except for creating and deleting ground event jobs (which must be invoked via this tool) and updating the Max Jobs In AutoSys for the various types of requests (On Demand, Routine and Reprocessing), this capability is almost always used only during system testing. You would only need to use this tool if a problem was identified and you were waiting for it to be resolved through normal channels.* You must first select a job box (not a job contained within a job box) to identify a DPR to work with. The following menu is displayed after selecting the **`JM Client`** button from the AutoSys Ops Console:

```
*** Current DPRId:MODPGE08#s28015500DEV04 Current Mode:DEV04 ***

 0) Exit
 1) Create DPR Job
 2) Release DPR Job
 3) Cancel DPR Job
 4) Change DPR Id
 5) View Job Management DPR Queue
 6) Create Ground Event Job
 7) Cancel Ground Event Job
 8) Change Max Concurrent Jobs for PGE Limits table
 9) Change Max/Min DPRs for Job Class
 a) Trigger release of un-released ready-to-run DPRs

Enter an option:
```

Once into the program, you can change DPR IDs by selecting option 4). This DPR ID stays in effect until another DPR ID is entered. Options 1) and 2), taken together, create and put a job into AutoSys, or on the queue, if AutoSys is full (the job is in a CQ_RELEASE state). Option 3 can be used to cleanly remove a job from AutoSys (as opposed to manually deleting the job from AutoSys).

Option 8 allows users to modify the DpPrPgeLimits database table. Option 9 allows users to modify the DpPrClassSchedulingLimits database table. Option A should be used whenever options 8 or 9 are used. This causes Job Management Server to re-evaluate ready DPRs for possible entry into AutoSys and execution.

Further details about how to use options 8 and 9 are explained in detail in:

/usr/ecs/<MODE>/CUSTOM/data/DPS/EcDpPrLoadTable.README

4.9.1.2.1.2 How Job Scheduling Works in PDPS/DPS

Chaining

A chain is a tree of DPRs with one root. It can be defined recursively, by picking a leaf DPR and then finding the parent DPR of that node, which contributes the most input granules used by the child. The recursion stops when a DPR only has external inputs. Ties between parents contributing an equal number of granules are resolved in no particular order.

The work of finding chains and assigning a chain a perl script named EcPlDetermineChain.pl, which is called by the Planning Workbench when a plan is activated, does Id to DPRs.

The concept of chaining is important, because all DPRs in a chain, by default are executed on a single computer. This is done to minimize communication of data on network-mounted file systems, by having most of the data for a chain produced and consumed locally.

In order to control chain processing, or to circumvent it altogether, it is necessary to declare PGEs to be chain heads in the Production Request Editor. For example, to completely deactivate PDPS chain processing, one would declare every pgeId to be a chain head. To enable total chain processing, declare no PGE to be a chain head, and EcPlDetermineChain finds chains starting with the DPREP PGEs.

Use of the DpPrPgeLimits table to control where DPRs run

All jobs in a chain are scheduled to run on machines specified for the PGE in the DpPrPgeLimits table. If no machines are listed for a PGE, another mechanism is found, which is discussed later. An easy way to balance the load on two or more computers is to specify an equal number of pgeIds to run on each computer. If this number is large, like 10,000, as many DPRs using this PGE ready to run, can potentially run, and the number is balanced on the valid computers. If the number is small, say 2 per machine, the number of DPRs using this PGE can be throttled, and the DPRs are queued.

Use of the DpPrClassSchedulingLimits table to control how many DPRs run

Using the example mentioned in the previous section, one could balance the number of PGEs on different computers by declaring an equal large number of them can run on different computers. But suppose it is desired to control the total number of DPRs that can run at any one time. This is done using the DpPrClassSchedulingLimits table. This table controls the total number of concurrent DPRs scheduled for Routine, Reprocessing and On-demand processing. When a slot is free, all DPRs ready to run and have empty slots in DpPrPgeLimits are considered, and the DPR with the oldest time stamp in PlDataProcessingRequest is selected to test.

Bypassing DpPrPgeLimits

A machine can be specified for a PGE to run on in the Production Request Editor. If no machine is specified in this way and the pgeId is not entered in DpPrPgeLimits, the computer is found from what was entered during PGE registration in the PlResourceRequirement table.

How to modify the DpPrPgeLimits and DpPrClassSchedulingLimits tables

Two options in the Job Management Client tool, which is accessed through the AutoSys Job Activity Console, allow one to modify these tables by specifying a file of table modification commands:

8) Change Max Concurrent Jobs for PGE Limits table

9) Change Max/Min Dprs for Job Class

Use of these options is explained in detail in:

```
/usr/ecs/<MODE>/CUSTOM/data/DPS/EcDpPrLoadTable.README
```

Alternatively, one can write one's own load script with SQL statements. You can always add pgeIds for a machine, and new machines to the DpPrPgeLimits table and change the maximum number of DPRs that can concurrently execute in DpPrClassSchedulingLimits, but you must never modify the number currently scheduled or running DPRs in these tables.

There can be no entries in DpPrPgeLimits, but DpPrClassSchedulingLimits must be fully populated. If this table is empty when the Job Management server starts, it loads it by reading the following configuration parameters:

```
DpPrMaxConcurrentDPRs    100 100 100
DpPrMinConcurrentDPRs    0 0 0
```

Job Management puts DPRs into AutoSys

When a DPR completionState is set to PENDING by the PLS Subscription Manager, or is released by the Planning Workbench, the Job Management server checks information in the limits tables and make a determination as to which is the next job to be placed into AutoSys. When jobs finish in AutoSys, or are cancelled by the Production Request Editor, this too triggers Job Management to check its queue to see which jobs can be waiting to get into AutoSys.

In very rare occasions, it is possible for DPS processing to freeze up if no triggering events can occur. In this case, you can use option a) from the Job Management Client to "wake up" the Job Management Server:

```
a) Trigger release of unreleased ready-to-run Dprs
```

4.9.1.2.2 AutoSys Job Definition

The AutoSys Job Definition GUI provides an interface to add new jobs, delete existing jobs, and modify attributes for existing jobs. Both Date/Time Options and Adv Features Dialogs can be used to set/modify all job attributes.

For more information about the AutoSys Job Definition please see the *AutoSys Users Manual*, Chapter 5 Defining AutoSys Jobs using the GUI.

Note: This capability must never be used without first checking with someone who knows something about the system internals. The ECS Job Management software handles the creating, running and removing of successfully completed jobs. Manually performing these functions bypasses Job Management housekeeping and can cause the processing system to get out of sync, possibly with severe consequences.

4.9.1.2.3 AutoSys Calendars

Not used by ECS.

4.9.1.2.4 AutoSys Monitor/Browser

Not used by ECS.

4.9.1.2.5 AutoSys Alarm Manager

The AutoSys Alarm Manager GUI provides an interface to monitor and manage alarms. Alarms can be filtered based on type, state, and time; a response can be registered for an alarm; and the state of the alarm can be changed. The Alarm Manager is invoked by clicking on the “Alarm” buttons on either the JobScape or AutoSys Operator’s Console GUI.

For more information about the AutoSys Alarm Manager please see the *AutoSys Users Manual*, Chapter 9, The Operator Console.

4.9.1.2.6 AutoXpert HostScape

The AutoXpert HostScape GUI provides an interface to monitor the states of resources, Event Server(s), Event Processor(s), and jobs. This GUI also provides buttons for launching Alarm and Job Console GUIs. For more information about HostScape see *AutoSys/Xpert User Guide for UNIX* Version 3.5, Product Overview.

4.9.1.2.7 AutoXpert JobScape

The AutoXpert JobScape GUI provides an interface to monitor states of jobs. This GUI presents a Pert-like (network) view of job processing from a job dependency point of view. Alarm and Job Console GUIs can be launched from this GUI. For more information about JobScape see *AutoSys/Xpert User Guide for UNIX* Version 3.5, Product Overview.

4.9.1.2.8 AutoXpert TimeScape

The AutoXpert TimeScape GUI provides an interface to monitor states of jobs. This GUI presents a Gantt-like (chart) view of job processing from a time-related point of view. This GUI also provides buttons for launching Alarm and Job Console GUIs. For more information about TimeScape see *AutoSys/Xpert User Guide for UNIX* Version 3.5, Product Overview.

4.9.1.3 Required Operating Environment

For all COTS packages, appropriate information on operating environments, tunable parameters, environment variables, and a list of vendor documentation can be found in a CM controlled document for each product. To find the documentation for AUTOSYS, refer to the ECS Baseline Information System web page,

URL http://cmdm.east.hitc.com/.

No tuning or configuration of the product is required, beyond that required by a normal installation.

4.9.1.3.1 Interfaces and Data Types

AutoSys exchanges data of various types through interfaces within ECS. Table 4.9.1-2 lists AutoSys system interfaces for Release 6B.

Table 4.9.1-2. Interfaces Between AutoSys and other ECS PDPS Components

Interface	Type of Primary Interface Protocols	Type of Backup Interface Protocols	Comments
Job Management, Job Management Client, View Job States	Job Interface Language, Library	None	The Job Management processes use the AutoSys COTS product to create and initiate execution of Data Processing Subsystem administrative jobs managing the Science Processor hardware (SPRHW) assets and for PGE execution.
PGE Execution Manager, Resource Usage	Library	None	The PGE Execution Manager controls and monitors PGE executions including Process Control File and output product storage growth. The Resource Usage process measures the actual resources used by the PGE and reports to AutoSys unexpected resource usage.
Execution Management	Library	None	The Execution Management process initiates the execution of PGEs via AutoSys. It supports the preparation activities prior to PGE execution and subsequent activities after PGE execution. It also provides status of on-demand processing requests and sends out e-mail to originators in case of a failure.

The information in the above table is informational only. It is not needed for normal operations.

4.9.1.4 Databases

All AutoSys information is stored in one of the three Sybase database types. The three types of databases are: Event Server, Monitor Server, and Alarm Server. The Event Server contains all the information about a particular instance of AutoSys such as job definitions, events, monitor and browser definitions, calendar information, and machine definitions. Monitor and Alarm Servers, not used within the ECS, are specialized databases for monitoring events and alarms.

See *AutoSys User Manual*, Chapter 13 “AutoSys Databases” for database schema definitions.

4.9.1.5 Special Constraints

None.

4.9.1.6 Outputs

AutoSys Event Processor(s), Event Server(s), and Remote Agent maintain log files. Table 4.9.1-3 lists AutoSys output log files.

Table 4.9.1-3. Outputs

Output	Description and Format
$AUTOUSER/out/event_demon.$AUTOSERV	Event Processor log file.
$SYBASE/install/errorlog	Event Server error log file.
AutoRemoteDir/auto_rem.*joid.run_num.ntry*	Remote Agent log file.

4.9.1.7 Event and Error Messages

AutoSys issues both status and error messages to the Event Processor log file ($AUTOUSER/out/event_demon.$AUTOSERV).

4.9.1.8 Reports

AutoSys autorep utility provides a method of generating reports containing information about jobs, machines, and global variables currently defined in the database. Table 4.9.1-4 lists AutoSys reports that can be generated. See the *AutoSys User Manual* for further information.

Table 4.9.1-4. Reports

Report Type	Report Description	When and Why Used
Job	The report provides information about jobs and their processing status Summary, detail, and query formats can be generated.	It should be used primarily for generating production history reports, but also can be used for real-time monitoring of jobs.
Machine	The report provides status of machines and attributes such as maximum load, current load, and factor. Summary, detail, and query formats can be generated.	It should be used for real-time monitoring of machines.

4.9.1.8.1 Sample Report

Figure 4.9.1-2 shows a sample AutoSys autorep Job Report obtained by using the command:

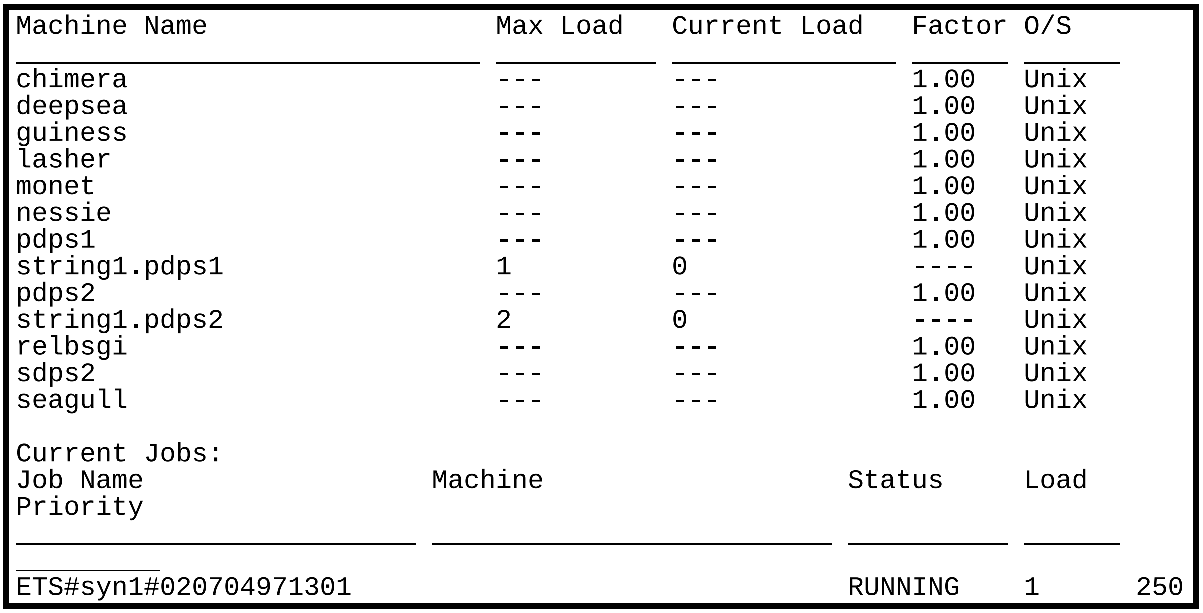
```
autorep - d -J % > report
```

```
Job Name                       Last Start  Last End    Status     Run
Pri/Xit
______________________________ ___________ ___________ __________ _______
BTS#syn1#020704981301          12/11 17:19 12/11 21:08 SUCCESS    9837/1

  Status/[Event]   Time          Ntry EventState  ProcessTime    Machine
  ---------------  -------------- --  ----------- -------------- -------
  RUNNING          12/11 17:19:01  1  Processed   12/11 17:19:19
  SUCCESS          12/11 21:08:54  1  Processed   12/11 21:08:59

  BTS#syn1#020704981301A       12/11 17:56 12/11 18:00 SUCCESS    9837/2

    Status/[Event]   Time          Ntry EventState  ProcessTime
Machine
    ---------------  -------------- --  ----------- -------------- ------
-
    STARTING         12/11 17:19:15  1  Processed   12/11 17:19:19 pdps1
    RUNNING          12/11 17:19:19  1  Processed   12/11 17:19:24 pdps1
    FAILURE          12/11 17:19:48  1  Processed   12/11 17:19:50
    [*** ALARM ***]
      JOBFAILURE     12/11 17:19:50  1  Processed   12/11 17:19:56 pdps1
    [FORCE_STARTJOB] 12/11 17:56:19  0  Processed   12/11 17:56:27
    STARTING         12/11 17:56:24  2  Processed   12/11 17:56:27 pdps1
    RUNNING          12/11 17:56:28  2  Processed   12/11 17:56:32 pdps1
    SUCCESS          12/11 18:00:51  2  Processed   12/11 18:00:58

  BTS#syn1#020704981301S       12/11 18:00 12/11 18:11 SUCCESS    9837/1

    Status/[Event]   Time          Ntry EventState  ProcessTime
Machine
    ---------------  -------------- --  ----------- -------------- ------
-
    STARTING         12/11 18:00:55  1  Processed   12/11 18:00:58 pdps1
    RUNNING          12/11 18:00:59  1  Processed   12/11 18:01:10 pdps1
    SUCCESS          12/11 18:11:25  1  Processed   12/11 18:11:32

  BTS#syn1#020704981301P       12/11 19:02 12/11 19:02 SUCCESS    9837/2

    Status/[Event]   Time          Ntry EventState  ProcessTime
Machine
    ---------------  -------------- --  ----------- -------------- ------
    STARTING         12/11 18:11:29  1  Processed   12/11 18:11:33 pdps1
    RUNNING          12/11 18:11:33  1  Processed   12/11 18:11:38 pdps1
    SUCCESS          12/11 18:13:20  1  Processed   12/11 18:13:27
    [FORCE_STARTJOB] 12/11 19:01:56  0  Processed   12/11 19:02:02
    STARTING         12/11 19:02:02  2  Processed   12/11 19:02:07 pdps1
    RUNNING          12/11 19:02:04  2  Processed   12/11 19:02:07 pdps1
    SUCCESS          12/11 19:02:22  2  Processed   12/11 19:02:28
```

Figure 4.9.1-2. AutoSys autorep Job Report

Figure 4.9.1-3 shows an AutoSys autorep Job Report (All) obtained by using the command:

```
autorep -d -m ALL >report
```



```
Machine Name                  Max Load   Current Load   Factor O/S
_____________________________ __________ ______________ ______ ______
chimera                       ---        ---            1.00   Unix
deepsea                       ---        ---            1.00   Unix
guiness                       ---        ---            1.00   Unix
lasher                        ---        ---            1.00   Unix
monet                         ---        ---            1.00   Unix
nessie                        ---        ---            1.00   Unix
pdps1                         ---        ---            1.00   Unix
string1.pdps1                 1          0              ----   Unix
pdps2                         ---        ---            1.00   Unix
string1.pdps2                 2          0              ----   Unix
relbsgi                       ---        ---            1.00   Unix
sdps2                         ---        ---            1.00   Unix
seagull                       ---        ---            1.00   Unix

Current Jobs:
Job Name                  Machine                   Status     Load
Priority
_________________________ _________________________ __________ ______

_________
ETS#syn1#020704971301                               RUNNING    1      250
```

Figure 4.9.1-3. AutoSys autorep Job Report - All

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4.9.2 ECS Quality Assurance (QA) Monitor

ECS QA Monitor processing capabilities enable DAAC operators to perform duties associated with DAAC QA activities. The ECS Quality Assurance (QA) Monitor GUI is the user-interface for entering data requests and displaying data, status, and error messages. The QA Monitor does not produce data products, but communicates with the science data server to retrieve data that have been previously archived.

The QA Monitor GUI is used to perform the operator functions listed in Table 4.9.2-1.

Table 4.9.2-1. Common ECS Operator Functions Performed with QA Monitor

Operating Function	Description	When and Why to Use
Query data granules	Initiates a request to search the science archive for data granules within a date[1] interval.	When there is a need to know all archived data granules with the same data type and inserted in the archive at a certain time (date interval).
Retrieve data granules	Initiates a request to get data granules from the science archive.	When data granule(s) needs to be transferred from archive to local disk for visualization.
Visualize data (HDF files)	Display Visualize screen.	When graphical images of data granules need to be viewed to assess quality.
Update metadata	Initiates a request to archive QA information about data granules.	When QA information about data granules needs to be updated in the archive based on DAAC QA activities encompassing use of the Visualize Data function.

4.9.2.1 Quick Start Using QA Monitor

The QA Monitor is used to search for granules in the science archive, to retrieve granules and/or processing history files from the science archive and to update metadata of granules retrieved from the science archive. The QA Monitor GUI's main screen has three windows: a window that displays the ESDTs of granules in the science archive, a data granule display window to select data to browse, and a status window to indicate progress or display error messages. Several dialog screens may be activated when functions are performed. Some windows are display-only for informational text, while others require user-interaction.

4.9.2.1.1 Invoking QA Monitor Tool From the Command Line Interface

To execute QA Monitor from the command line prompt use the startup script provided during installation and located in utilities subdirectory of the operational directory structure:

```
EcDpPrQaMonitorGUIStart <mode>
```

[1] This is the data acquisition beginning and ending date.

<mode> is the ECS Mode for the execution (e.g., OPS, TS1 or TS2).

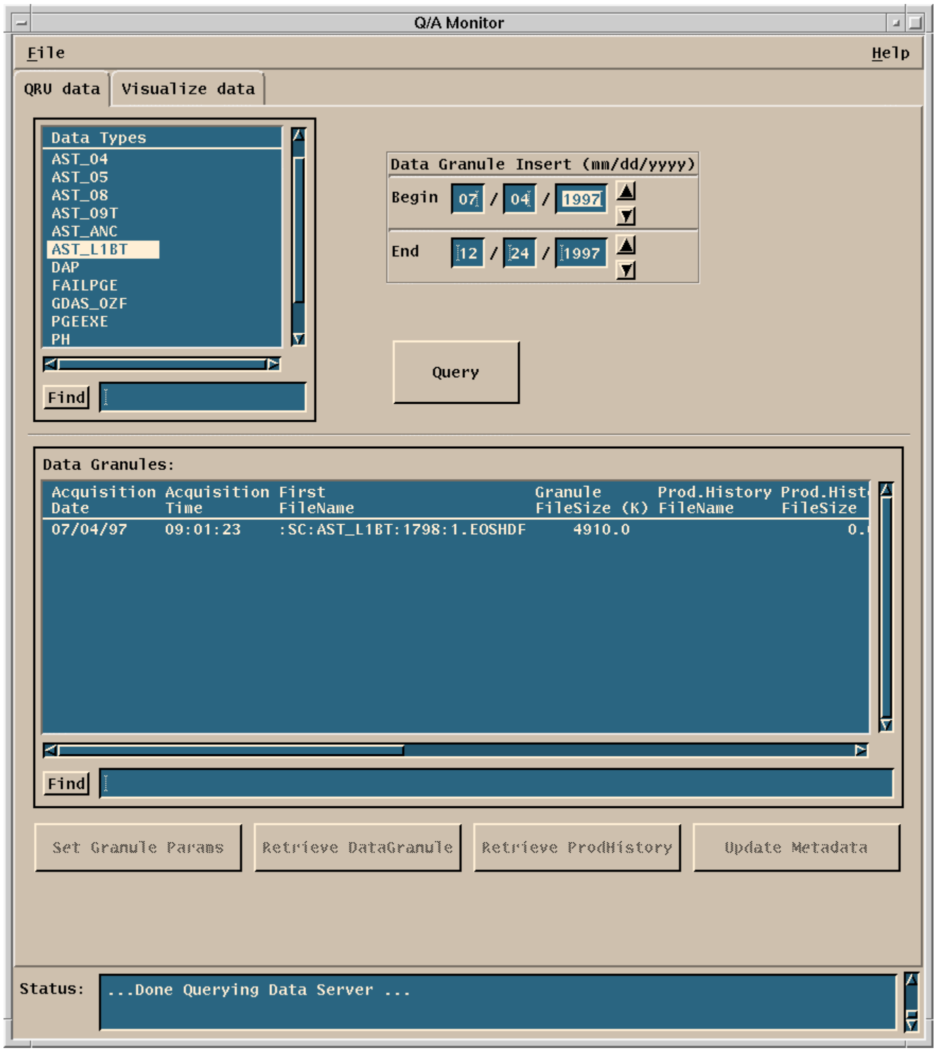
Refer to the 920-TDA-022 "Custom Code Configuration Parameters" documentation series, for a listing of EcDpPrQaMonitorGUIStart.

4.9.2.2 QA Monitor Main Screen

The QA Monitor Tool Main Screen shown in Figure 4.9.2-1 provides access to all QA Monitor primary functions. It consists of the QRU (Query/Retrieval/Update) data Tab and the Visualize data Tab. The QRU data Tab is activated when the QA Monitor Main Screen is initialized. A group of related objects is displayed by default to help the operator get started. The Data Types, Data Granules, Date Granule Insert (acquisition date of granules) windows, and the Query pushbutton are displayed, plus four desensitized (grayed-out) pushbuttons. These objects and the QRU data object which controls display of this screen are needed to perform a query. Other available data types are displayed in the Data Types window so the operator can choose which data type to query on. This enforces the sequence of events: query, retrieve and update. The grayed-out pushbuttons are sensitized after a Query, which permits selection of the indicated functions. The Visualize data Tab displays a list of science granules available for browsing.

From this screen, the following functions can be performed:

- Request the Science Data Server to search for specific types of Data Granules (Section 4.9.2.2.1)
- Request the Science Data Server to transfer Data Granules to the operator's computer
- Request the Science Data Server to transfer Production History to the operator's computer
- Update Data Granules' Metadata (Section 4.9.2.2.2)
- View graphical images of Data Granules (Section 4.9.2.2.3)
- Print Display Lists of Data Granules and Data Types (Section 4.9.2.2.4)



Data Types
AST_04
AST_05
AST_08
AST_09T
AST_ANC
AST_L1BT
DAP
FAILPGE
GDAS_0ZF
PGEEXE
PH

Data Granule Insert (mm/dd/yyyy)
Begin 07 / 04 / 1997
End 12 / 24 / 1997

Data Granules:

Acquisition Date	Acquisition Time	First FileName	Granule FileSize (K)	Prod.History FileName	Prod.Hist FileSize
07/04/97	09:01:23	:SC:AST_L1BT:1798:1.EOSHDF	4910.0		0.

Status: ...Done Querying Data Server ...

Figure 4.9.2-1. QA Monitor Tool Main Screen

The operator can select the following menu items from the QA Monitor Main Screen

- **File** This menu contains the following items:

  Print allows the operator to print the Data Types list and the Data Granules list (Section 4.9.2.2.4)

  Exit allows the operator to exit the QA Monitor

Help The "Help" menu offers the following help choices: (Note: Presently not functional)

On Help displays help about using help

On Context displays help about individual screen elements. Context sensitive help pops up a scrolled window that displays text about a specific user interface component. There are two ways to get context sensitive help:

The first way to get context sensitive help is to move focus to an active user interface component (e.g., text entry field, scroll list) and press the Help key. Help is displayed about that element. If the keyboard does not have a key labeled Help, the F1 key usually functions as the help key.

The second way is to select "On Context" from the Help menu. The cursor changes to a question mark. Clicking on any user interface component displays help about that element.

On Window displays high-level help about the window (see "Tutorial" below)

On Keys displays help about using the keyboard and general help about standard user interface components that support complex behaviors. Topics include:

1. How to get context sensitive help
2. How to use keyboard mnemonics and accelerators to access menu functions without using the mouse
3. How to navigate between active fields on windows using the keyboard

Index is currently not supported.

Tutorial displays an extended discussion of the application and its role within the ECS system.

On Version identifies what version of ECS software is currently being used.

On Mode identifies the operating mode of the ECS software currently being used.

Additionally, the following functions may be selected on the QRU data Tab:

- **Query**: refer to Section 4.9.2.2.1
- **Set Granule Params**: refer to Section 4.9.2.2.2
- **Retrieve DataGranule**: refer to Section 4.9.2.2.1
- **Retrieve ProdHistory**: refer to Section 4.9.2.2.1
- **Update Metadata**: refer to Section 4.9.2.2.2

The following functions may be selected on the Visualize data Tab (refer to Section 4.9.2.2.2):

- **Visualize**: refer to Section 4.9.2.2.3
- **Help**: refer to Section 4.9.2.2.3

4.9.2.2.1 Query and Retrieve Data

The QA Monitor allows the operator to search the data archive for data granules by data type. The available data types are displayed when the main screen comes up and allows the operator to choose which data type to query on. The operator may accept the default dates or enter new dates to further constrain the search. Clicking on the Query pushbutton initiates the search request. If a search is successful a list of data granules are displayed. Then the operator can have them transferred from the data archive to his computer. Where the data is located on the operator's computer is a configurable item. To request transfer of a data granule, highlight the row with information about the granule desired by clicking on it then click on the Retrieve Data pushbutton. A message appears in the Status window indicating the processing status. To get the production history file associated with the granule just click on the Retrieve ProdHist pushbutton.

For a description of the "Query and Retrieve Data" fields, see Table 4.9.2-2 below.

Table 4.9.2-2. QA Monitor Field Descriptions

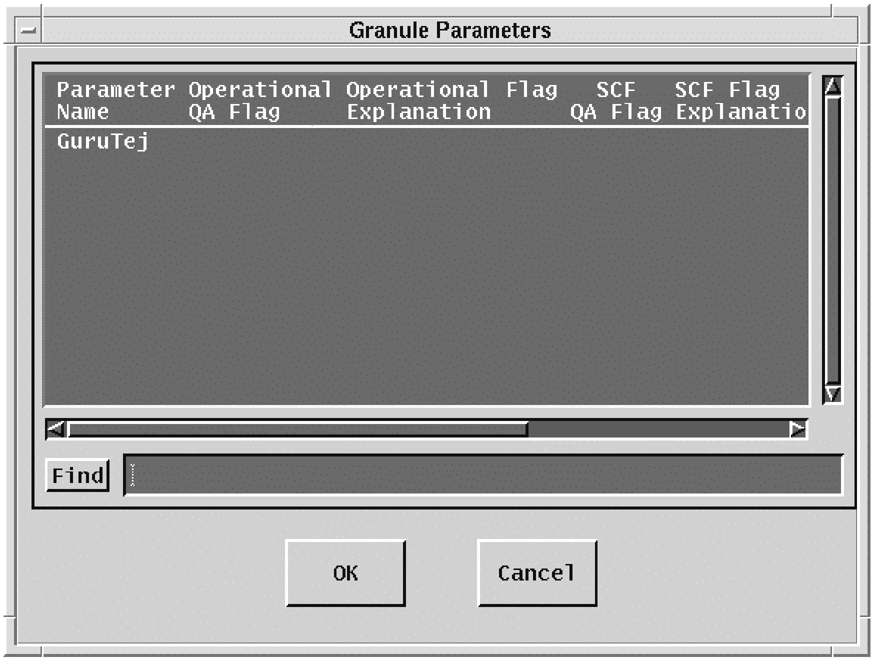
Field Name	Data Type	Size	Entry	Description
Data Granule Insert Begin End	Date Min Max	8 8	Initial default value (1/2/1901-6/1/2036) can be changed by the operator	The date interval window that data granules are inserted into the data server.
Data Types list	Single Selection	N/A	The Operator selects a data type from the list displayed at startup	The list of all available data types at a specific DAAC.
Data Granules list	Multiple Selection	N/A	The Operator clicks data granule row(s) then clicks retrieve pushbutton	The list of all data granules (in the date interval above) for a particular selected data type is available for retrieval.
Status	Text	N/A	Display status messages only	Display status messages.

In addition, the following pushbuttons are provided:

- **Query** populates the list of data granules on the bottom half of the screen for a particular selected data type within a date interval.
- **Find** (below the data types and data granules list) allows the operator to perform a keyword search for information stored in those 2 lists.
- **Retrieve DataGranule** allows the operator to retrieve data granule(s) from the DAAC's data archive to local disk.
- **Retrieve ProdHistory** allows the operator to retrieve a production history tar file from the DAAC's data archive to local disk.
- **Update Metadata** pops up a Granule Parameters screen (see Section 4.9.2.2.2 below).

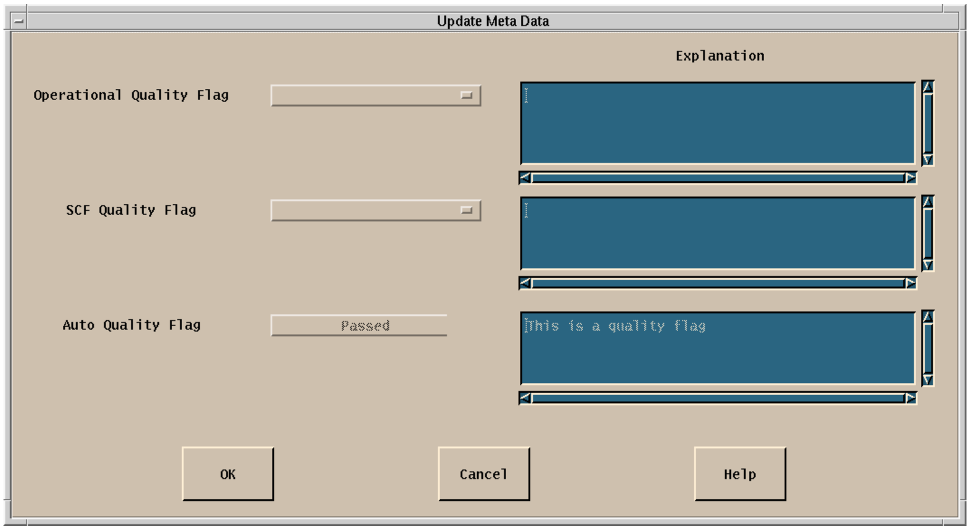
4.9.2.2.2 Update Metadata

Clicking on one data granule displayed in the Data Granules Field and then the Update Metadata pushbutton brings up the Granule Parameters screen shown in Figure 4.9.2-2. The list of parameter names is attributes describing the selected data granule. The settings for the parameters are determined by the DAAC, SCF or PGE. Those settings are displayed along with explanations, if any. After DAAC QA of a data granule the DAAC operator may update the operational QA flag providing an explanation. To update a parameter, click the parameter name then click OK. The Update Metadata screen is displayed as shown in Figure 4.9.2-3.


Granule Parameters

```
Parameter Operational Operational Flag   SCF   SCF Flag
Name      QA Flag     Explanation      QA Flag Explanatio
GuruTej
```

Figure 4.9.2-2. Granule Parameters Dialog



Auto Quality Flag Passed

This is a quality flag

Figure 4.9.2-3. Update Metadata Dialog

For a description of the "Update Metadata" dialog fields, see Table 4.9.2-3 below.

Table 4.9.2-3. Update Metadata Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
Operational Quality Flag, SCF Quality Flag	Character	N/A	Operator selects value	DAAC and SCF quality status setting of a data granule parameter. The valid values are: • Passed • Failed • Being investigated • Not being investigated
Operational Quality Explanation, SCF Quality Explanation	Character	Less than 150 chars	Operator inputs text	Text describing quality status.
Auto Quality Flag	Character	N/A	Operator input not allowed	Quality status of a data granule parameter set during data processing. The valid values are: • Passed • Failed • Being investigated • Not being investigated

Table 4.9.2-3. Update Metadata Field Descriptions (2 of 2)

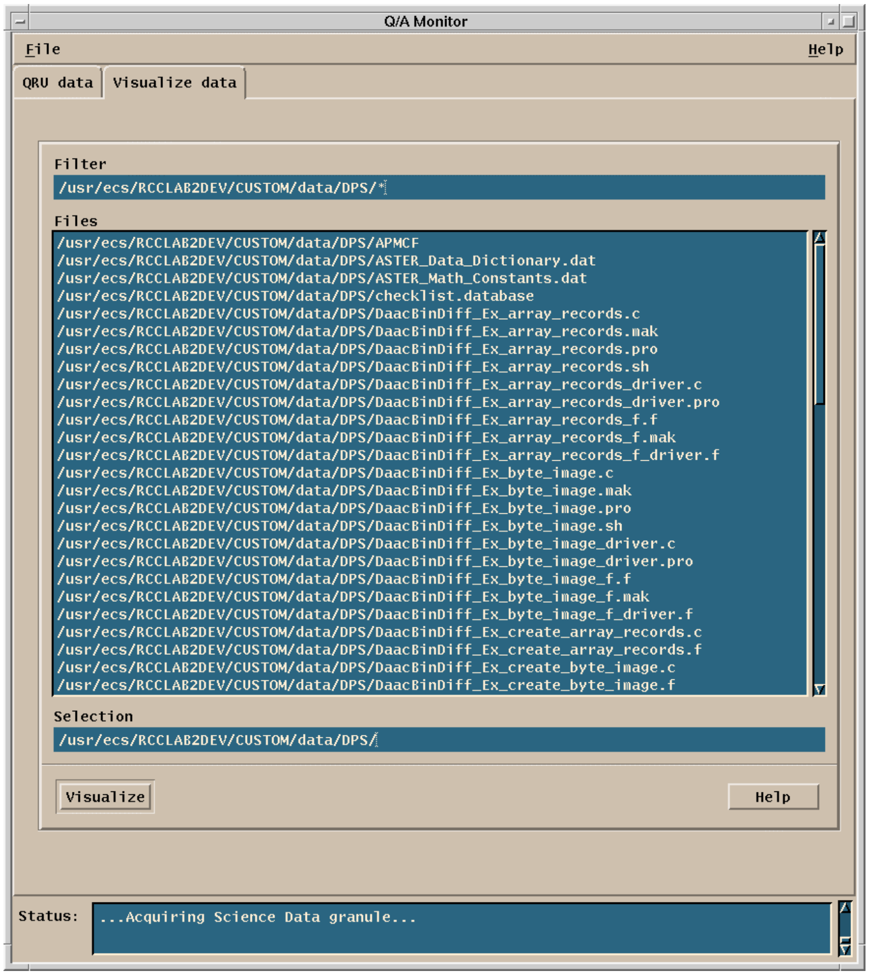
Field Name	Data Type	Size	Entry	Description
Automatic Quality Explanation	Character	N/A	Operator input not allowed	Quality status of a data granule parameter set during data processing.

In addition, the following pushbuttons are provided:

- **OK** sends an update request to the data server to update data granule parameter values
- **Cancel** cancels the update request
- **Help** displays the help for Update Metadata

4.9.2.2.3 Visualize Data

Clicking on Visualize data from the QA Monitor GUI main screen brings up the **Visualize Data** Tab shown in Figure 4.9.2-4. The operator clicks a row with the name of a science file to browse. When the Visualize pushbutton is activated EOSView is invoked. The EOSView GUI requires operator input to produce a graphical image of the science data file (see Section 4.12.5 "EOSView"). Note that the EOSView GUI can only read data products that are in HDF format.



Filter

/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/*

Files

```
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/APMCF
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/ASTER_Data_Dictionary.dat
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/ASTER_Math_Constants.dat
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/checklist.database
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_array_records.c
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_array_records.mak
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_array_records.pro
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_array_records.sh
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_array_records_driver.c
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_array_records_driver.pro
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_array_records_f.f
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_array_records_f.mak
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_array_records_f_driver.f
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_byte_image.c
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_byte_image.mak
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_byte_image.pro
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_byte_image.sh
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_byte_image_driver.c
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_byte_image_driver.pro
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_byte_image_f.f
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_byte_image_f.mak
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_byte_image_f_driver.f
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_create_array_records.c
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_create_array_records.f
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_create_byte_image.c
/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/DaacBinDiff_Ex_create_byte_image.f
```

Selection

/usr/ecs/RCCLAB2DEV/CUSTOM/data/DPS/

Status: ...Acquiring Science Data granule...

Figure 4.9.2-4. Visualize Data Tab Stack

For a description of the "Visualize data" fields, see Table 4.9.2-4 below.

Table 4.9.2-4. Visualize Data Field Descriptions

Field Name	Data Type	Size	Entry	Description
Filter	Character	N/A	Unedited	Indicates path and filenames to be displayed as established in the configuration file.
Files	Character	N/A	Click on a row	Highlights row information.
Selection	Character	N/A	Unedited	Full pathname of the file selected for viewing is displayed.

In addition, the following pushbuttons are provided:

- **Visualize** invokes EOSView for visualizing data products
- **Help** displays help for the file selection box

4.9.2.2.4 Print Options

Clicking on "File" pull-down menu brings up the **Print Options** dialog shown in Figure 4.9.2-5. This dialog allows the operator to select which list, data types list or data granules list, or both, to be sent to the printer.

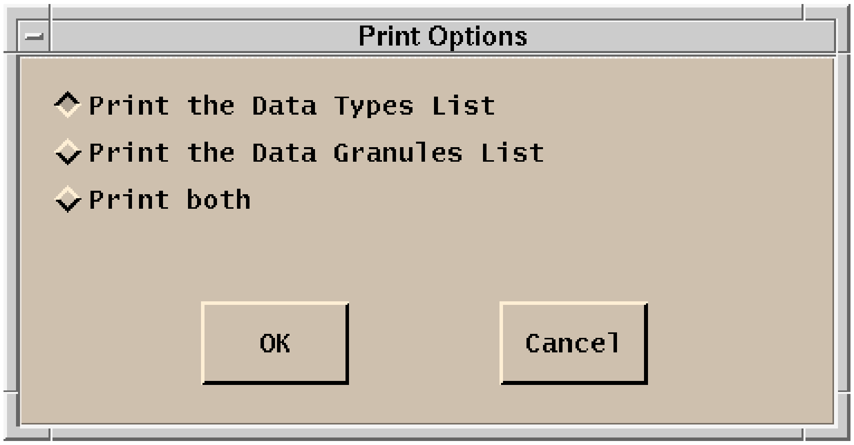


Figure 4.9.2-5. Print Options Dialog

For a description of the "Print Options" fields, see Table 4.9.2-5 below.

Table 4.9.2-5. QA Monitor Tool Field Descriptions

Field Name	Data Type	Size	Entry	Description
Print data types list	N/A	N/A	Select 1 at a time	This toggle button is selected if the operator wants the data types list to be sent to the printer.
Print data granules list	N/A	N/A	Select 1 at a time	This toggle button is selected if the operator wants the data granules list to be sent to the printer.
Print both	N/A	N/A	Select 1 at a time	This toggle button is selected if the operator wants both lists to be sent to the printer.

In addition, the following pushbuttons are provided:

- **OK** sends a print request to the printer for option selected
- **Cancel** cancels the print request

4.9.2.3 Required Operating Environment

For information on the operating environment, tunable parameters and environment variables of the QA Monitor Tool refer to the 920-TDA-022 "Custom Code Configuration Parameters" documentation series.

4.9.2.3.1 Interfaces and Data Types

The QA Monitor Tool does not have any external interfaces to ECS. However, there is an internal interface to the Science Data Server to query and retrieve data granules, and update metadata.

4.9.2.4 Databases

None.

4.9.2.5 Special Constraints

None.

4.9.2.6 Outputs

Other than the output displayed to the operator the QA Monitor is responsible for file (science data files in the HDF format) transfers from the science archive to the local disk of the QA Monitor host computer. It also sends data to the science archive to be stored.

4.9.2.7 Event and Error Messages

The QA Monitor issues status messages to the Status Messages text area at the bottom of the QA Monitor GUI and error messages on pop-up error dialogs. Both event and error messages are listed in Appendix A.

4.9.2.8 Reports

None.

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4.10 Science Data Archive and Distribution

This section describes the Science Data Archive and Distribution tools used by DAAC operators.

The Data Server Subsystem (DSS) has the responsibility for storing earth science and related data in a persistent fashion, providing search and retrieval access to this data, and supporting the administration of the data, hardware devices, and software products. As part of its retrieval function, the subsystem also provides for distribution of data electronically or on physical media.

The ECS Data Server Operator GUIs provide normal operational control and insight into science data server, storage management, and data distribution subsystem operations. These views into the system are managed by means of five operational tools described in the following sections:

4.10.1 Science Data Server GUI

4.10.2 Storage Management Control GUI

4.10.3 Data Distribution Requests GUI

4.10.4 Granule Deletion Administration Tool

4.10.5 Product Distribution System (PDS) Stand Alone (PDSSA) User Interface

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4.10.1 Science Data Server GUI

The Science Data Server GUI provides the operator two major functions, the management of Earth Science Data Types and the management of all types of requests that the Science Data Server operator is involved with. Further details on these two functions are given in Table 4.10.1-1.

Table 4.10.1-1. Common ECS Operator Functions Performed with the Science Data Server GUI

Operating Function	GUI	Description	When and Why to Use
Manage Science Data Server Earth Science Data Types (ESDTs)	Data Types Tab	Allows operators to manage the ESDTs offered by the Science Data Server	As needed, to manage data type descriptor information and add and update ESDTs
Manage Data Server System Requests	System Requests Tab	Allows operators to manage all the requests within each data server component	As required, to manage requests in each data server component

4.10.1.1 Quick Start Using the Science Data Server

To invoke the ECS Science Data Server GUI, enter the following:

EcDsSdSrvGuiStart <**mode**>

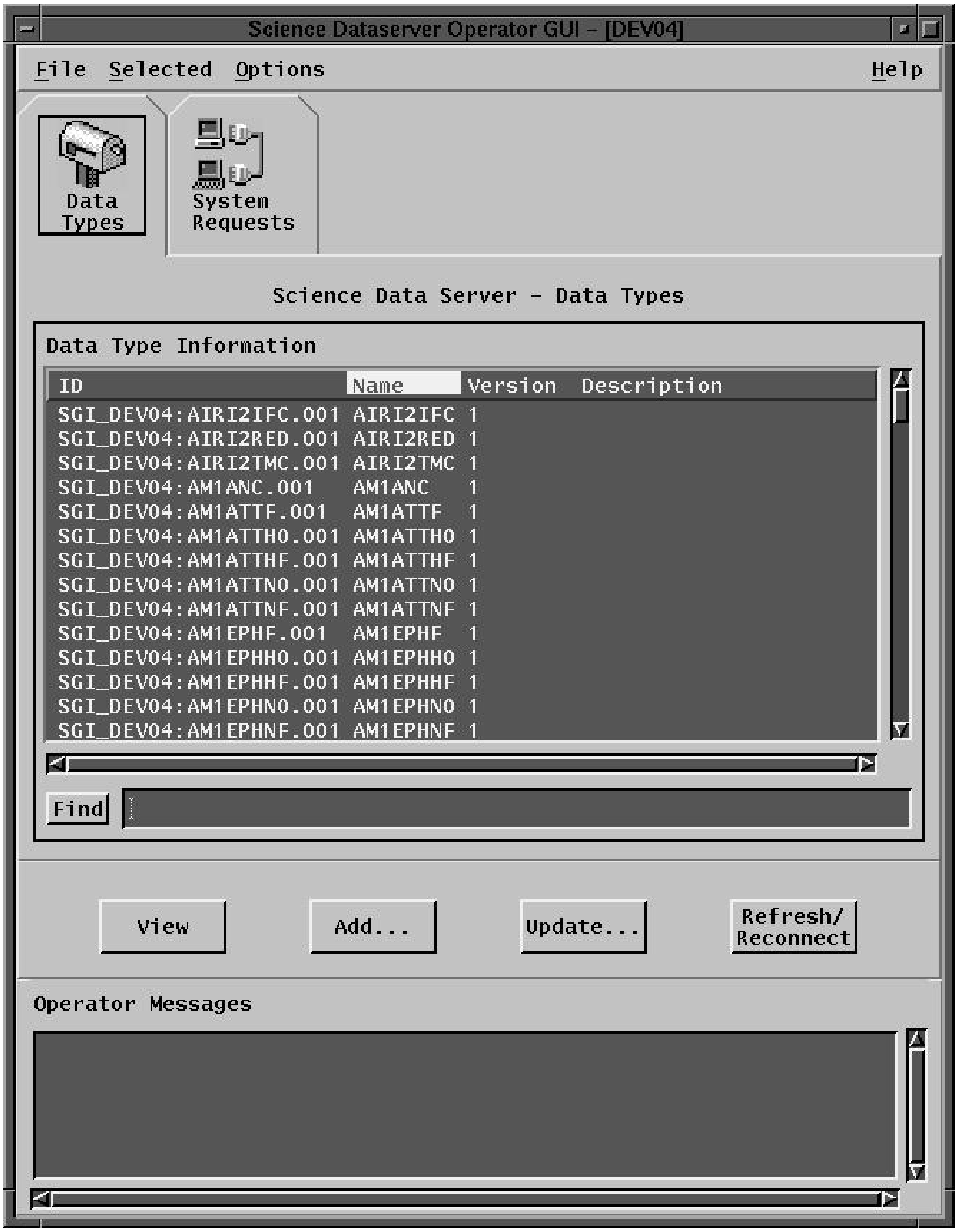
Where:

<**mode**> is the ECS mode for the execution (e.g., OPS, TS1 or TS2).

4.10.1.2 Science Data Server Main Screen

The ECS Science Data Server GUI, shown in Figure 4.10.1-1, has two tabs that provide access to each one of the component’s screens.

- The Earth Science Data Type Manager is accessed through the **Data Types** tab
- The System Request Manager is accessed through the **System Requests** tab.



ID	Name	Version	Description
SGI_DEV04:AIRI2IFC.001	AIRI2IFC	1	
SGI_DEV04:AIRI2RED.001	AIRI2RED	1	
SGI_DEV04:AIRI2TMC.001	AIRI2TMC	1	
SGI_DEV04:AM1ANC.001	AM1ANC	1	
SGI_DEV04:AM1ATTF.001	AM1ATTF	1	
SGI_DEV04:AM1ATTH0.001	AM1ATTH0	1	
SGI_DEV04:AM1ATTHF.001	AM1ATTHF	1	
SGI_DEV04:AM1ATTN0.001	AM1ATTN0	1	
SGI_DEV04:AM1ATTNF.001	AM1ATTNF	1	
SGI_DEV04:AM1EPHF.001	AM1EPHF	1	
SGI_DEV04:AM1EPHH0.001	AM1EPHH0	1	
SGI_DEV04:AM1EPHHF.001	AM1EPHHF	1	
SGI_DEV04:AM1EPHN0.001	AM1EPHN0	1	
SGI_DEV04:AM1EPHNF.001	AM1EPHNF	1	

Figure 4.10.1-1. Science Data Server GUI Shown with Default Data Types Tab

The operator can select from the menu bar items at the top of the Science Data Server GUI window for getting help and activating special functions. The menu bar capability is available on all Science Data Server GUI screens. The following options are available through the toolbar:

File - which includes the following item:

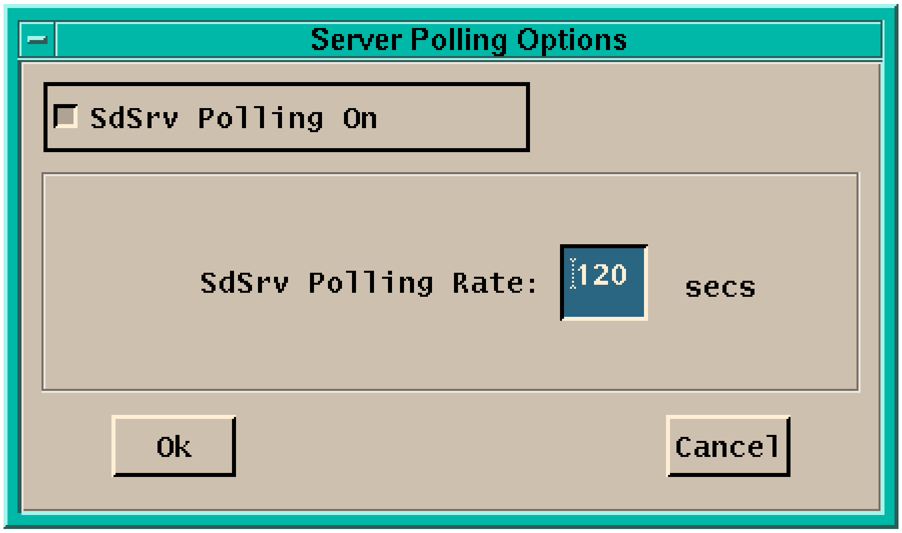
> **Exit** (Ctrl-Q) - Exit application (graceful exit)

Selected - which includes the following items:

> **Duplicate** - Not implemented
>
> **Select All** - Not implemented
>
> **Deselect All** - Deselects any items that were previously selected
>
> **Change Permissions** - Not implemented

Options - This menu includes the *System Settings* item that opens the Server Polling Options window shown in Figure 4.10.1-2. Polling of the data server can be switched On/Off and the polling rate can be adjusted.

Help - which provides context sensitive help.



Server Polling Options

□ SdSrv Polling On

SdSrv Polling Rate: 120 secs

Figure 4.10.1-2. Science Data Server - Server Polling Options

Table 4.10.1-2 describes the fields used on the Server Polling Options window.

Table 4.10.1-2. Science Data Server - Server Polling Field Description

Field Name	Data Type	Size	Entry	Description
SdSrv Polling On	Button	N/A	Optional	Pressing this button on invokes automatic polling by the SDSRV at the time interval specified in the *SdSrv Polling Rate: ssss secs* field.
SdSrv Polling Rate	Integer	4 digits	Optional	Specify the rate at which the Science Data Server GUI is updated with data coming from the Data Server. The polling rate interval default is 120 seconds.
OK	Button	N/A	Optional	Pressing this button submits the polling rate setup for activation.
Cancel	Button	N/A	Optional	Cancels the submission of a new polling rate setup.

4.10.1.2.1 Data Types Tab

The Data Types Tab is the default screen of the Science Data Server GUI shown in Figure 4.10.1-1. This window provides operations personnel at the DAAC the capability to view descriptor information, add new ESDTs and update ESDTs. A list of currently installed ESDTs is shown containing the ESDT ID, name, version number, and a brief description of the structure and services available for the ESDT. Select the data type and click on the *View* button for additional information describing the structure, contents and services for each existing ESDT.

Table 4.10.1-3 describes the Science Data Server - Data Types fields.

Table 4.10.1-3. Science Data Server - Data Types Field Description

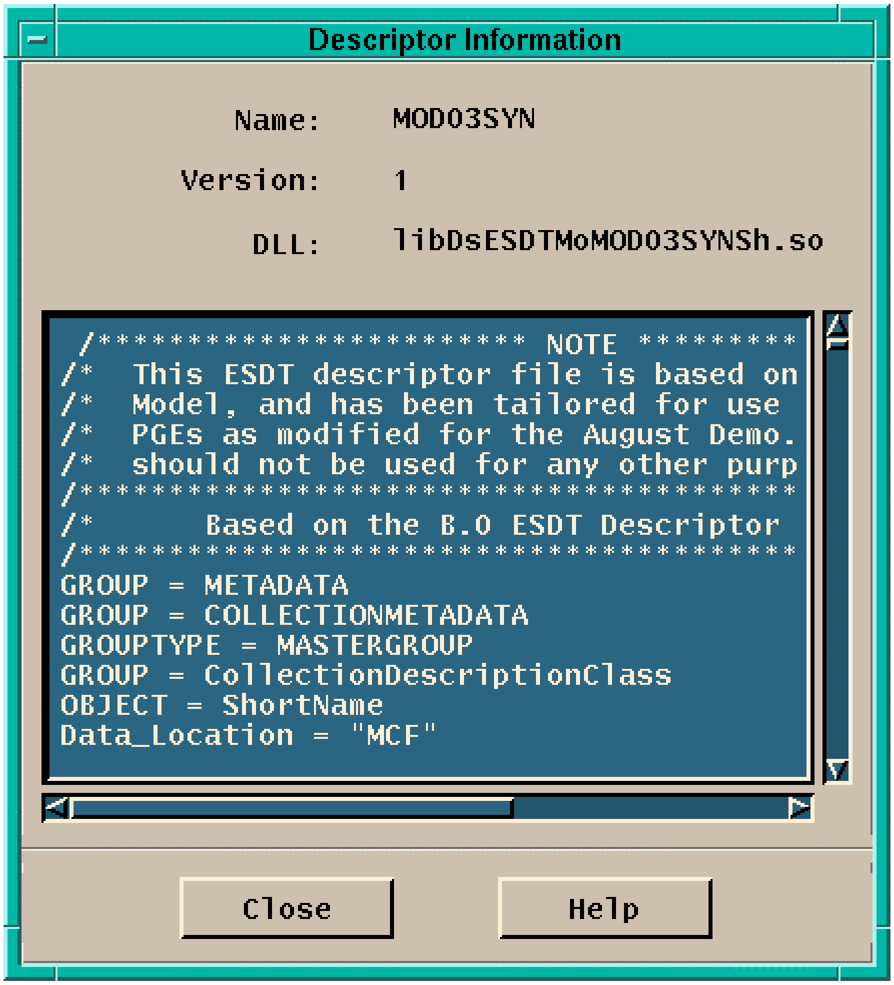
Field Name	Data Type	Size	Entry	Description
Data Type ID	Character	8	System generated	Uniquely identifies the specific type of ESDT.
Name	Character	25	System generated	Name of ESDT.
Version	Integer	3	System generated	Version number of the ESDT (assigned starting at 1).
Description	Character	255	System generated	Includes structure and services available for an ESDT.
Find	Character	255	Optional	This functionality is provided in order to help the user browsing very long ESDT lists.

In addition, the following buttons are provided:

- The **View** button on the Data Types sub-tab displays ESDT descriptor information (read-only) and it is associated dynamic data link library (DLL) filename. Descriptor information consists of groups, objects, and keywords defining a ESDTs metadata, advertised services, subscribable events, data dictionary information, validation criteria, and science parameters. Descriptor information is necessary for the Science Data Server to properly configure itself to perform services related to an ESDT. A DLL is an executable library that is loaded dynamically when needed to fulfill ESDT services. The

Science Data Server - Descriptor Information Dialog (see Figure 4.10.1-3 below) provides the following buttons:

– **Close** exits the dialog
– **Help** displays on-line help information



Name: MOD03SYN

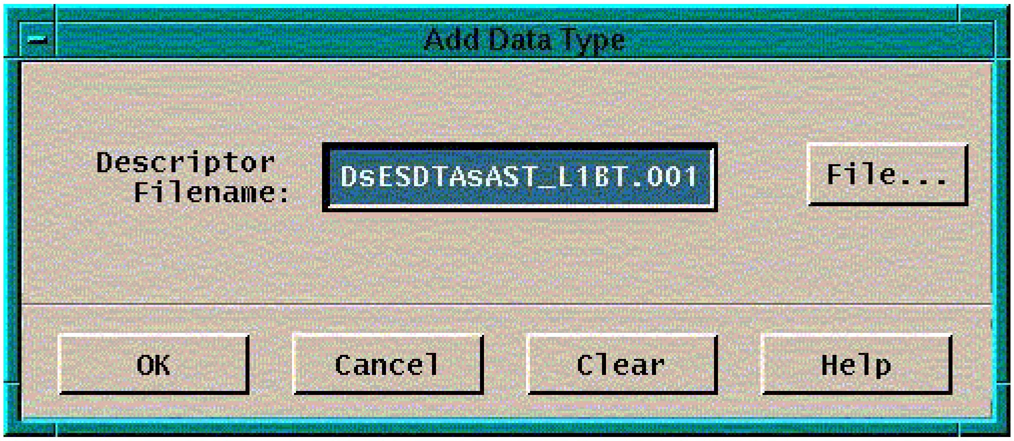
Version: 1

DLL: libDsESDTMoMOD03SYNSh.so

```
 /*********************** NOTE *********
/*  This ESDT descriptor file is based on
/*  Model, and has been tailored for use
/*  PGEs as modified for the August Demo.
/*  should not be used for any other purp
/****************************************
/*      Based on the B.0 ESDT Descriptor
/****************************************
GROUP = METADATA
GROUP = COLLECTIONMETADATA
GROUPTYPE = MASTERGROUP
GROUP = CollectionDescriptionClass
OBJECT = ShortName
Data_Location = "MCF"
```

Figure 4.10.1-3. Science Data Server - Descriptor Information Dialog

- The **Add…** button on the Data Types tab shown in Figure 4.10.1-1 opens the Data Type Dialog shown in Figure 4.10.1-4. This window is used to add a new ESDT to the existing installed list of data types based upon input information. The SDSRV GUI has the capability to install multiple ESDTs. Click on the **File…** button to display a list of descriptor filenames to choose from instead of typing them in. Multiple descriptor files can be selected. Click the **OK** button to add the data type. If no error messages appear, the operation has been successfully completed. Click the **Cancel** button to close the dialog without performing an operation. Click the **Clear** button to start all over again the process of filling in new information. Click the **Help** button to display on-line help information.



Descriptor Filename: DsESDTAsAST_L1BT.001

Figure 4.10.1-4. Science Data Server - Add Data Type Dialog

Table 4.10.1-4 describes the Science Data Server - Add Data Type Dialog fields.

Table 4.10.1-4. Science Data Server - Add Data Type Field Description

Field Name	Data Type	Size	Entry	Description
Descriptor Filename	Character string	25	Required	Name of an ASCII file containing the ESDT descriptor file.

- The **Update…** button on the Data Type tab in Figure 4.10.1-1 opens the Update ESDT Dialog shown in Figure 4.10.1-5. This window is used to update an ESDT to the installed list of data types based upon input information. The SDSRV GUI provides the capability to update multiple ESDTs at one time. The Science Data Server needs to be running in Maintenance mode to accept this operation. Click on the **File…** button to display a list of descriptor filenames to choose from instead of typing them in. Multiple descriptor files can be selected. Click the **OK** button to update the data type. If no error messages appear, then the operation has been successfully completed. Click the **Cancel** button to close the dialog without performing an operation. Click the **Clear** button to start all over again the process of filling in new information. Click the **Help** button to display on-line help information.

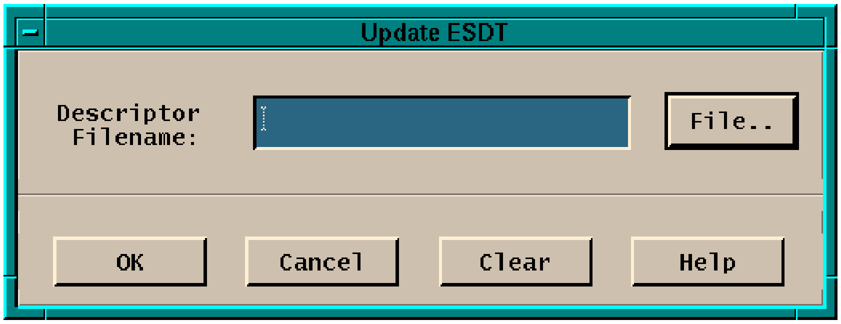


Figure 4.10.1-5. Science Data Server - Update Data Type Dialog

Table 4.10.1-5 describes the Science Data Server - Update Data Type fields.

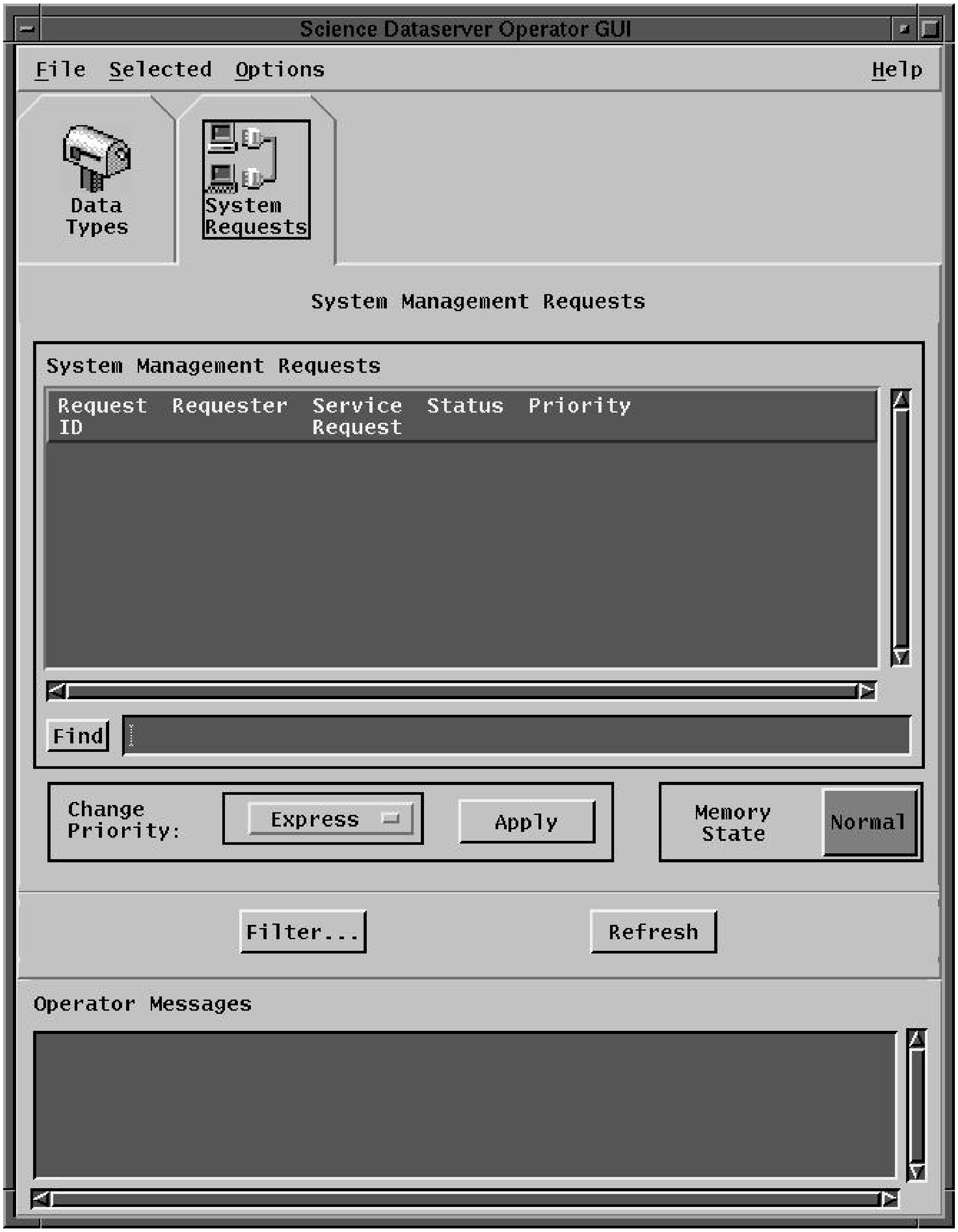
Table 4.10.1-5. Science Data Server - Update Data Type Field Description

Field Name	Data Type	Size	Entry	Description
Descriptor Filename	Character string	255	Required	Name of an ASCII file containing the ESDT descriptor file.

- The **Refresh/Reconnect** button on the Data Types sub-tab of Figure 4.10.1-1 updates the data type information screen with current information.
- The **Operator Messages** field on the Data Types sub-tab of Figure 4.10.1-1 displays informational and error messages.

4.10.1.2.2 System Requests Tab

Clicking the **System Requests** tab brings up the System Management Requests window (see Figure 4.10.1-6). This window provides operations personnel at the DAAC the capability to monitor requests the Science Data Server is working with. All requests within the Science Data Server are displayed. Positioning the cursor and clicking on the appropriate column of interest sorts the columns of the list. Positioning the cursor and clicking on the Filter button and entering the attributes on which to filter can filter the requests.



Change Priority: Express

Memory State: Normal

Figure 4.10.1-6. System Management Requests Window

Table 4.10.1-6 describes the System Management Requests Window fields.

Table 4.10.1-6. System Management Requests Field Description

Field Name	Data Type	Size	Entry	Description
Request ID	Character	255	System generated	Unique identifier for the request.
Requester	Variable character	100	System generated	Identifies the user that submitted the request.
Service Request	Character	25	System generated	Types of requests handled are Insert, Acquire, and Delete.
Status	Character	20	System generated	Possible states are Submitted, Queued, Executing, Failed_Retryable, Failed_Fatal, Failed_Unknown and Done.
Priority	Variable character	20	System generated	Priority of the data server system requests, i.e., Express, Very High, High, Normal (default), Low.
Find	Character	255	Optional	If the list is too long, this field can be used to search for an entry.

In addition, the following buttons are provided:

- **Change Priority:** allows the operator to change the priority of each selected request through a pull down menu. Possible values are: Express, Very High, High, Normal (default) and Low.

- **Apply** allows the operator to commit to the priority change selected through the change priority button.

- **Filter…** (See Figure 4.10.1-7) brings up the System Management Filter Requests dialog, which provides a selection of attributes on which to filter for the list of System-wide requests. Filter on system management requests by entering the desired information, then clicking on the Request ID or Requester radio button for the desired attribute. Return to the original list of requests by clicking on the All Requests radio button. Click on other filters associated with State and Priority by clicking on the toggle button. Filter on every attribute associated with a category by clicking the **All** button or clear a category of filters by clicking on the **None** button.

- **Memory State** monitors the current memory state of the data server in regards to values that are set on the server side through configuration parameters. Possible values are: Normal (green), Low (yellow), Very Low (red) and Disabled (gray). The Memory State shows a Disabled state when this functionality has been turned off (by setting the DSSMEMORYMONITORDISABLEFLAG in the data server's configuration file).

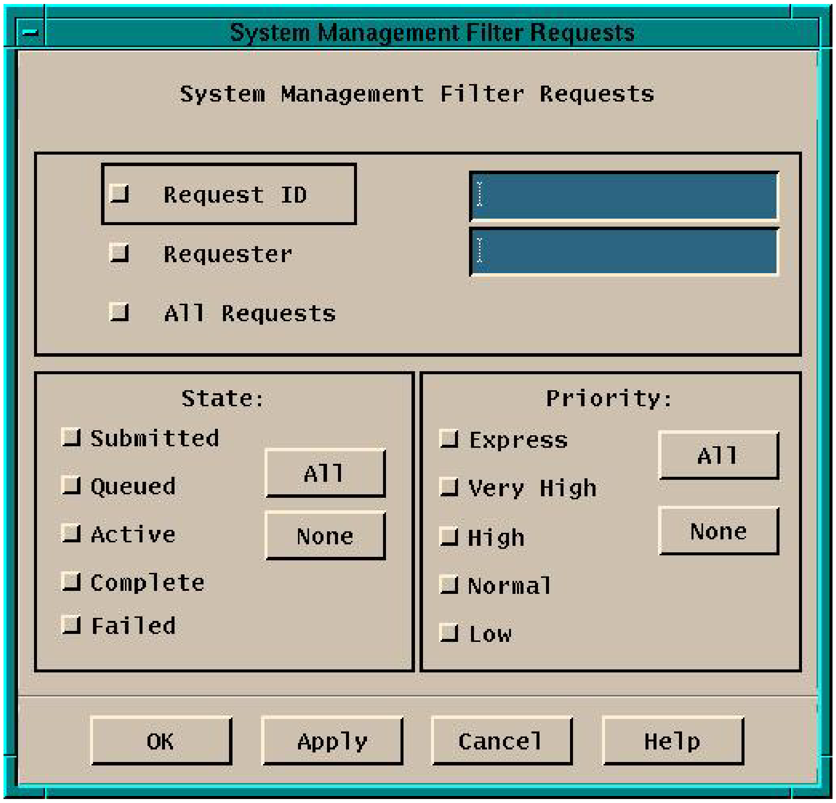


Figure 4.10.1-7. System Management Filter Requests Dialog

Table 4.10.1-7 describes the System Management Filter Requests Dialog fields.

Table 4.10.1-7. System Management Filter Requests Field Description

Field Name	Data Type	Size	Entry	Description
Request ID	Character	255	System generated	Unique identifier for the request.
Requester	Variable character	100	System generated	Identifies the user submitting the request.

In addition, the following buttons are provided:

- **OK** implements filter criteria, and the dialog closes
- **Apply** implements filter criteria, and the dialog remains open for additional filtering
- **Cancel** closes the dialog without saving
- **Help** displays on-line help information

- Back to the System Requests tab description (Figure 4.10.1-6), **Operator Messages** provides informational and error messages to the DAAC Operator

- **Refresh** causes the Data Server to be polled for an update on Requests

4.10.1.3 Required Operating Environment

For information on the operating environment, tunable parameters, and environment variables refer to the 920-TDA-022 “Custom Code Configuration Parameters” documentation series.

4.10.1.3.1 Interfaces and Data Types

Table 4.10.1-8 lists the supporting products that this tool depends upon in order to function properly.

Table 4.10.1-8. Interface Protocols

Product Dependency	Protocols Used	Comments
SDSRV and all clients	Socket	Via client libraries
SDSRV GUIs	X-11	Via client libraries

4.10.1.4 Databases

The Science Data Server GUI does not include the direct managing of any database. It has an interface with the Science Data Server Data Base: however this interface is based on a simple parameter passing function. For further information of the Science Data Server Data Base refer to 311-CD-624, *Science Data Server Database Design and Schema Specifications for the ECS Project*.

4.10.1.5 Special Constraints

The Science Data Server GUI runs only if the Science Data Server is running in the background. Note also that at the moment the Science Data Server GUI is started through a command line that specifies the configuration file that is used to initialize the GUI Application.

4.10.1.5.1 Deleting an ESDT

The Science Data Server GUI does not provide a means of deleting an ESDT. A script command is provided for this purpose and is invoked as follows:

>***EcDsSrRemesdt <mode> <descriptor file name>*** where:
<mode> is the operating mode affected (e.g., OPS, TS1 or TS2)
<descriptor file name> is the name of the ESDT’s descriptor file

4.10.1.6 Outputs

There is no processing associated with the operation of this GUI. The information provided to the operator are retrieved from the Data Server Database described in Section 4.10.1.4 and displayed through the screens discussed in Section 4.10.1.2 and the related sub-sections.

4.10.1.7 Event and Error Messages

Both event and error messages are listed in Appendix A.

4.10.1.8 Reports

This tool produces no reports.

4.10.2 Storage Management Control GUI

This tool enables operations to manage various data storage functions. These functions include the capability to set and modify configurations of various server types (e.g., 8mm tape, Archive Server and DTF tape), manage data location within the archive and on disk, configure stacker slots, display storage events which possibly require operator actions, and view backup failures with the capability to restart a backup operation.

The tool is used to perform the operator functions listed in Table 4.10.2-1.

Table 4.10.2-1. Common ECS Operator Functions Performed with STMGT Control

Operating Function	Command/Script or GUI	Description	When and Why to Use
Configure Servers and Devices	Storage Config Tab	Allows the operator to organize and configure various Server and any associated disk and hardware resources.	As needed to add, delete, or modify the configuration of a Server or hardware resource.
Configure Volume Groups	Vol. Grp. Config. Tab	Allows the operator to organize and configure the data flow in and out of various archives.	As needed to configure archive repositories for ESDTs.
Monitor Media Resources	Resource Mgmt. Tab	Allows the operator to monitor and set resource availability for media distribution.	As needed to make available or take off-line specific resources.
View Cache Statistics	Cache Stats. Tab	Allows the operator to view the contents and usage statistics for a Read-Only Cache or the Pull Area. Operator can force expiration and cleanup of liens against cached files.	Used when warning is displayed in the message area informing the operator the cache is getting too full.
Search Event Log	Storage Events Tab	Allows the operator to find events from selected parameters.	As needed to locate events.
Monitor Server Operations	Request Status Tab	Allows the operator to monitor the progress of requests throughout the STMGT CI.	As needed to monitor processing (e.g., to detect stalled requests or servers, which appear to be idle).

4.10.2.1 Quick Start Using the Storage Management Control GUI

The Storage Management Control GUI provides the user with the capability to control the following STMGT components:

1. **Storage Configuration (Storage Config.)**
2. **Volume Group Configuration (Vol Grp Config.)**
3. **Resource Management (Resource Mngmnt)**
4. **Cache Monitoring (Cache Stats.)**
5. **Storage Events (Storage Events)**
6. **Server Monitoring (Request Status)**

To invoke the Storage Management Control GUI, enter the following command line:

>EcDsStmgtGuiStart <**mode**>….

where:

<**mode**> corresponds to the system mode in which to operate (e.g., OPS, TS1 or TS2). Note that the Unix "**DISPLAY**" environment variable must be properly set for the GUI to display on your screen.

4.10.2.2 The Storage Management Control Operator Main Screen

The Storage Management Control Main Screen, shown in Figure 4.10.2-1, consists of 6 tabs, which provide user control of the components listed above. The operator can select from the following toolbar menu items located at the top of the window for each component:

File contains the exit command to close the application

Options allows the operator to set polling rates for various displays within the GUI

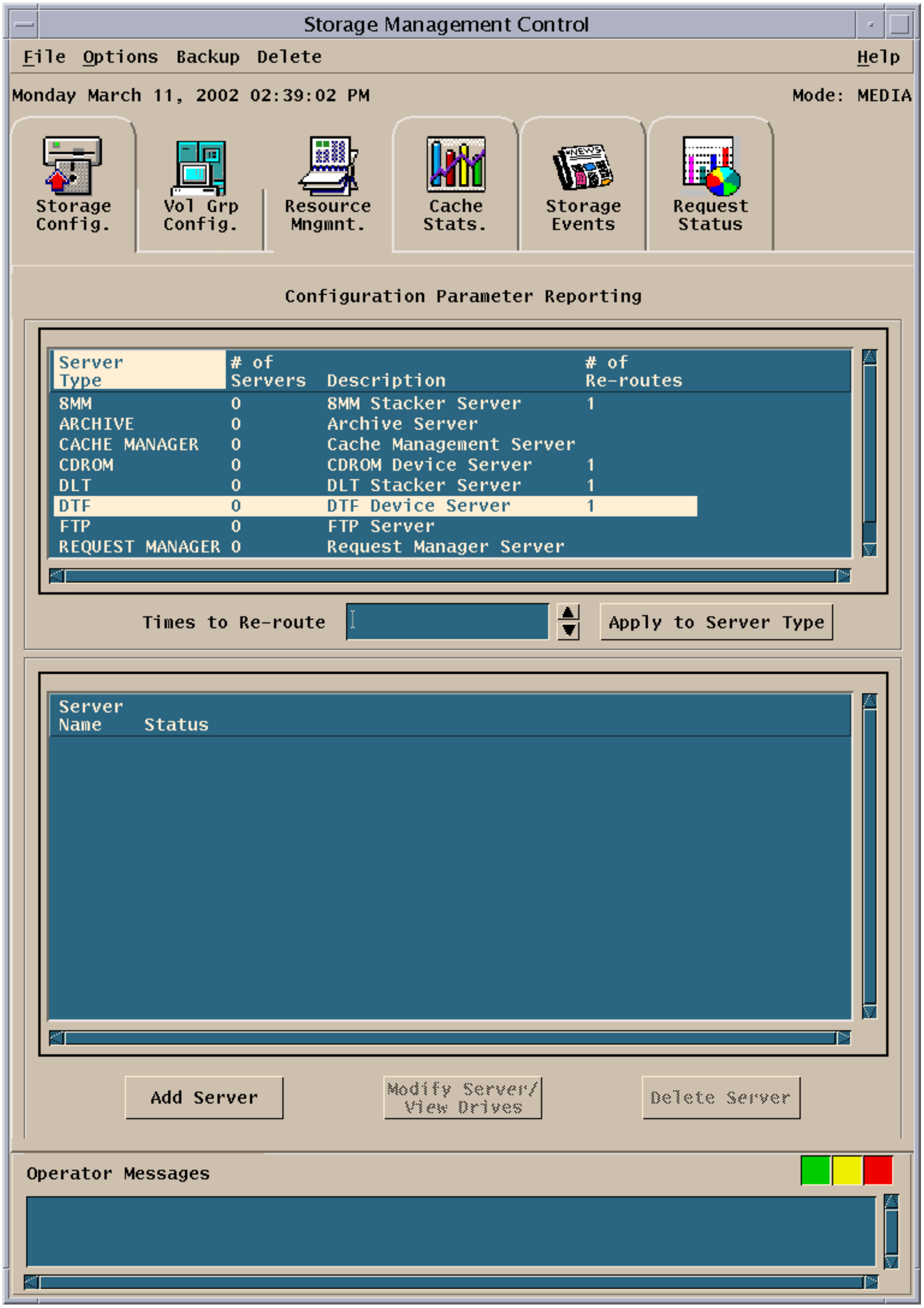
Backup allows the operator to recover from failures to store backup copies of ingested data

Help provides context sensitive help to the operator

The STMGT Control Main Screen also contains an **Operator Messages** list box to display error conditions.

4.10.2.2.1 Storage Configuration Tab

The Storage Configuration Tab, shown in Figure 4.10.2-1, displays server identification information, and allows the operator to view and control the server configuration including adding, deleting and modifying server instances and their associated disk and hardware resources.



Monday March 11, 2002 02:39:02 PM

Mode: MEDIA

Configuration Parameter Reporting

Server Type	# of Servers	Description	# of Re-routes
8MM	0	8MM Stacker Server	1
ARCHIVE	0	Archive Server	
CACHE MANAGER	0	Cache Management Server	
CDROM	0	CDROM Device Server	1
DLT	0	DLT Stacker Server	1
DTF	0	DTF Device Server	1
FTP	0	FTP Server	
REQUEST MANAGER	0	Request Manager Server	

Server Name	Status

Figure 4.10.2-1. Storage Management Server Main Screen with the Default Storage Configuration Tab Displayed (Storage Config.)

This includes servers to both distribute data and archive data. Activating a separate window and inserting a set of parameters for that type of server can configure each specific server.

Selecting a Server Type brings up a list of configured servers in the list box below. Table 4.10.2-2 describes the fields shown on the Storage Configuration tab.

Table 4.10.2-2. Storage Management Server Field Description

Field Name	Data Type	Size	Entry	Description
Server Type	Character	20	Preloaded	Type of server to configure.
# of Servers	Integer	N/A	Calculated	Number of Server instances configured for this Server Type.
Description	Character	100	Preloaded	Brief description of Server Type.
# of Re-routes	Integer	3	Required	For media server types, the maximum number of times a request can be re-routed to an alternate instance of a media server before the request is failed.
Times to re-route	Character	3	Required	Number of times to re-route (see above). The user can change the value by modifying this field and pressing the **Apply to Server Type** button.
Server Name	Character	20	System generated	Name, which uniquely identifies the server instance within the mode.
Status	Character	N/A	System generated	Status of the server, either up or down.

The Storage Configuration Tab includes several buttons. These buttons are: **Apply to Server Type**, **Add Server, Modify Server** and **Delete Server**. (Note: When a media server is selected, the **Modify Server** button is automatically re-labeled as **Modify Server/View Stackers** or **Modify Server/View Devices**.) The functionality associated with these buttons is discussed below along with the pop-up windows that are displayed when the buttons are depressed.

Apply to Server Type updates the number of re-routes configured for that media type.

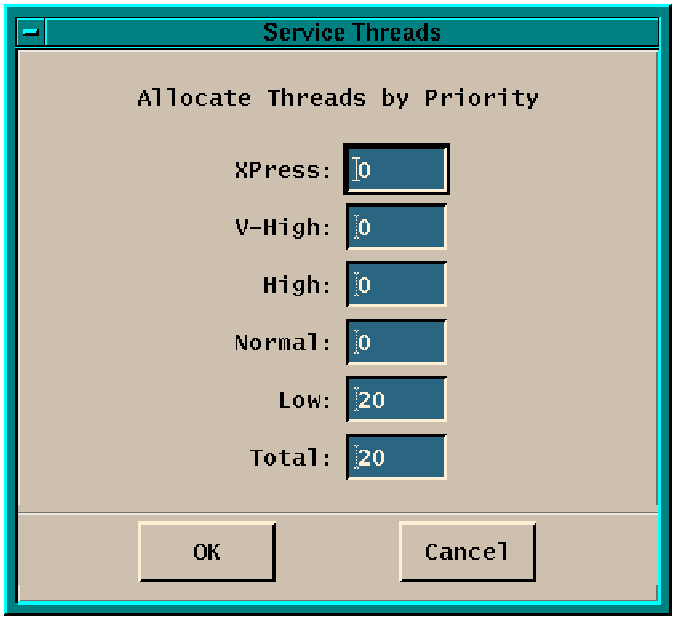
Add Server allows the operator to add a server instance of the selected Server Type to the configuration. A screen appears, which allows the operator to configure the parameters and resources for the new server instance. Different Server Types have different screens to address the particular configuration of that Server Type.

Modify Server allows the operator to change the parameter settings or resources associated with the selected server. For media servers, this includes stacker and device resources. The screen appearing is identical to the screen used for **Add Server** for the same Server Type. These screens are discussed in the following sections.

Delete Server allows the operator to remove configuration of a selected server instance. This removes all stored configuration information associated with parameters and configured resources for the deleted server. Operators are not permitted to delete servers that are running; the executing server instance must be brought down before it can be deleted.

All server configuration windows provide **OK** and **Cancel** buttons. Pressing the **OK** button saves the server configuration information to the database and closes the server configuration window. **Cancel** closes the server configuration window without saving the configuration information to the database.

All server configuration windows also provide a **Service Threads** field with an associated **Allocate by Priority** button. The **Service Threads** field specifies the number of worker threads, which is allocated within the server instance to process requests. By clicking on the **Allocate by Priority** button, these threads can be allocated by priority in order to reserve certain resources for higher priority requests. Note that lower-priority threads can be used to service higher priority requests, but never vice versa. Figure 4.10.2-2 illustrates the window that is presented when clicking on any **Allocate by Priority** button. All fields refer to the number of threads allocated to service requests of the indicated priority (or higher). By default, all service threads are created as low priority service threads, since these can be pre-empted by any priority request. So that the total of the numbers in each of the 5 different thread type fields equals the number in the Total field, the number of low threads is automatically re-calculated whenever the number of any of the other thread types is changed.



Service Threads

Allocate Threads by Priority

XPress: 0

V-High: 0

High: 0

Normal: 0

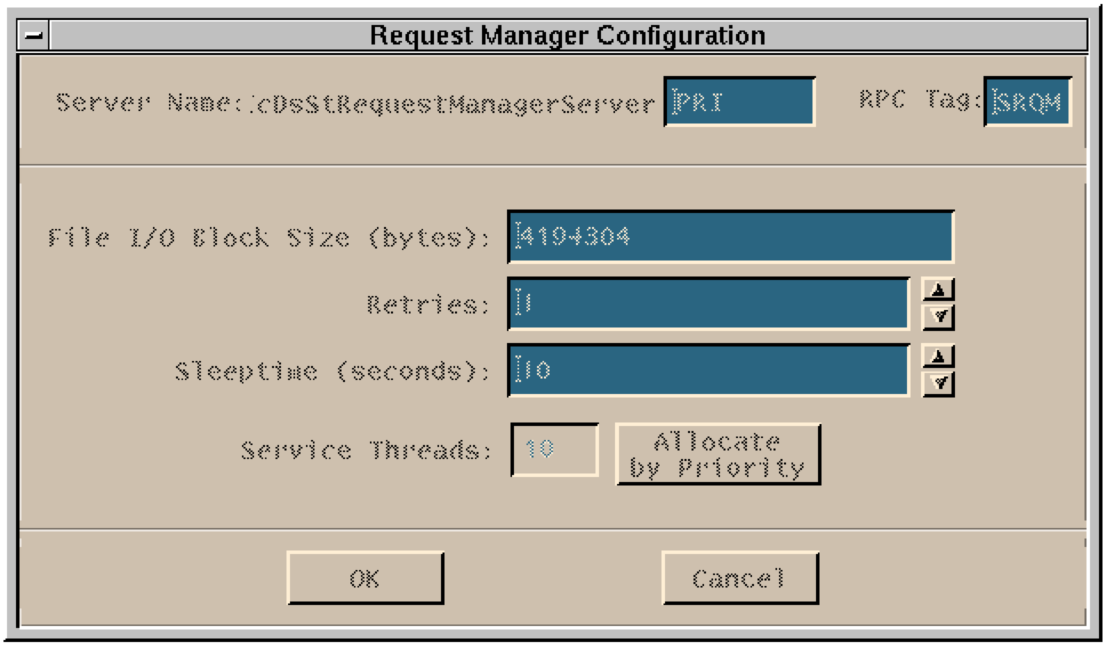
Low: 20

Total: 20

Figure 4.10.2-2. Service Thread Configuration Window

4.10.2.2.1.1 Request Manager Server Configuration

Figure 4.10.2-3 displays the server configuration window for configuring instances of the Request Manager Server.



Request Manager Configuration

Server Name: cDsStRequestManagerServer PRI

RPC Tag: SRQM

File I/O Block Size (bytes): 4194304

Retries: 1

Sleeptime (seconds): 10

Service Threads: 10

Figure 4.10.2-3. Request Manager Configuration Window

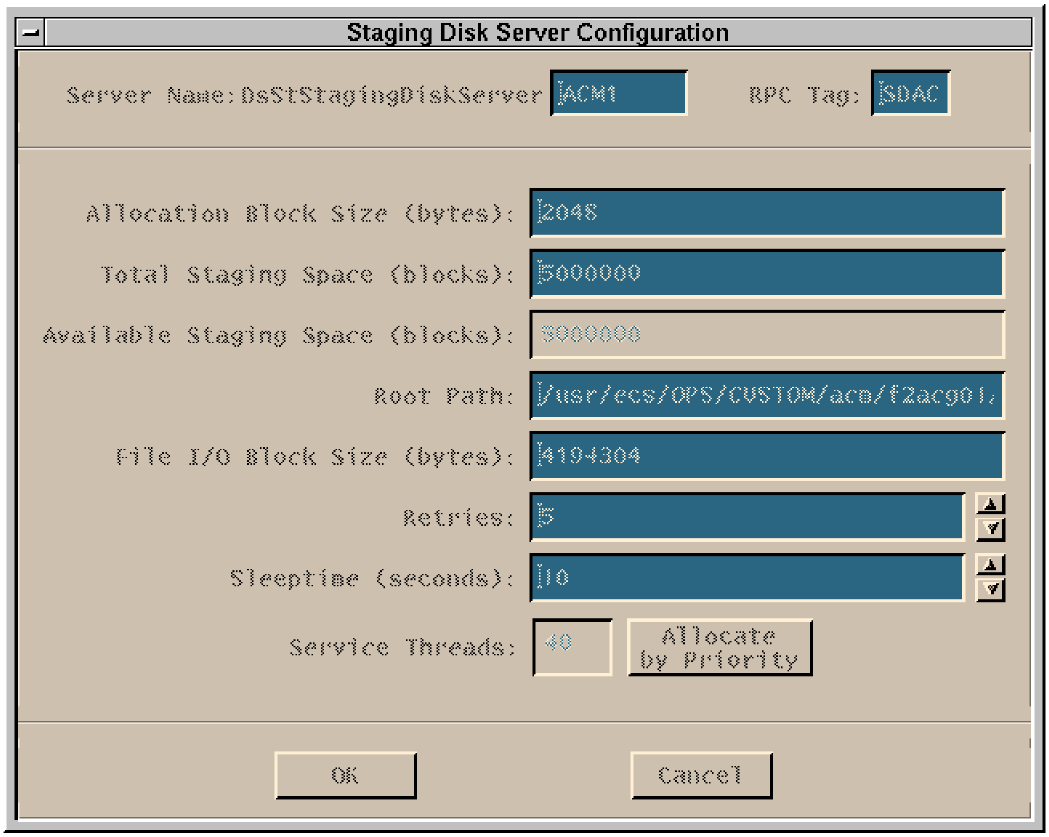
Table 4.10.2-3 describes the fields shown on the Request Manager Configuration pop-up window.

Table 4.10.2-3. Request Manager Configuration Window Field Descriptions

Field Name	Data Type	Size	Entry	Description
Server Name	Character	6	Required	Name of this instance of the Request Manager Server. The only names which are recognized by the STMGT client interface are PRI and SEC.
RPC Tag	Character	4	Required	The four-character tag, which appears in RPC Ids submitted by the Request Manager Server. Recommended values are RQMA and RQMB.
File I/O Block Size (bytes)	Integer	16	Required	The block size to be used for file I/O.
Retries	Integer	3	Required	The number of times to retry failed operations.
Sleeptime (seconds)	Integer	5	Required	The time to sleep, in seconds, between retries.
Service Threads	Integer	5	Required	The number of Service Threads available to process requests submitted to the Request Manager Server.

4.10.2.2.1.2 Staging Disk Server Configuration

Figure 4.10.2-4 displays the server configuration window for configuring instances of the Staging Disk Server.



Server Name:DsStStagingDiskServer ACM1

RPC Tag: SDAC

Allocation Block Size (bytes): 2048

Total Staging Space (blocks): 5000000

Available Staging Space (blocks): 5000000

Root Path: /usr/ecs/OPS/CUSTOM/acm/f2acg01/

File I/O Block Size (bytes): 4194304

Retries: 5

Sleeptime (seconds): 10

Service Threads: 40

Figure 4.10.2-4. Staging Disk Server Configuration Window

Table 4.10.2-4 describes the fields shown on the Staging Disk Server Configuration pop-up.

Table 4.10.2-4. Staging Disk Server Configuration Window Field Descriptions (1 of 2)

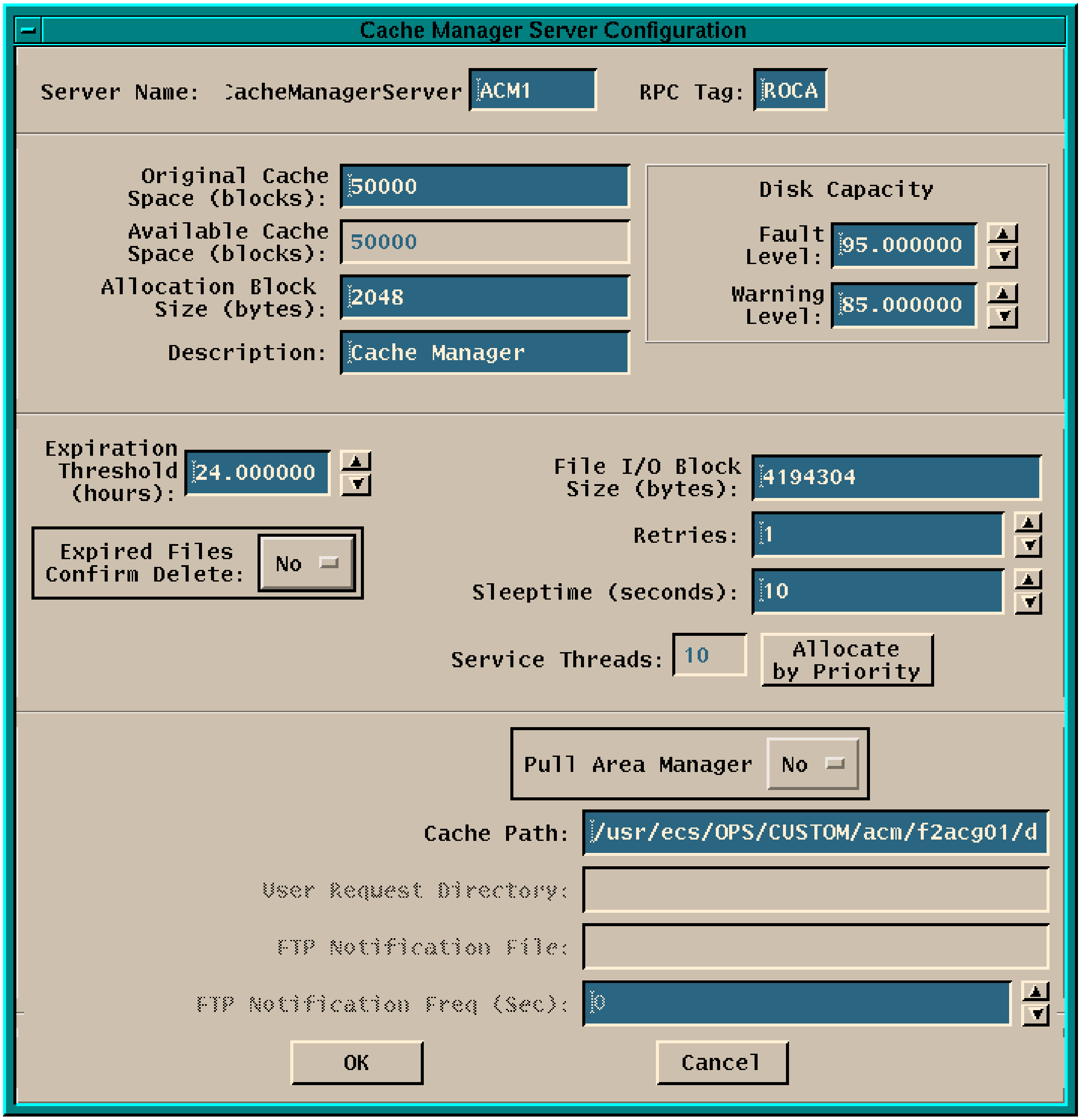
Field Name	Data Type	Size	Entry	Description
Server Name	Character	6	Required	Name of this instance of the Staging Disk Server.
RPC Tag	Character	4	Required	The four-character tag, which appears in RPC Ids submitted by the Staging Disk Server. Recommended values are STDA, STDB, etc.
Allocation Block Size (bytes)	Integer	16	Required	Block size in bytes to be used for allocation purposes. Clients, which must accommodate links to other files, allocate one block per link to be created.

Table 4.10.2-4. Staging Disk Server Configuration Window Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
Total Staging Space (blocks)	Integer	16	Required	Total space available on disk for allocation. The units used are allocation blocks.
Available Staging Space (blocks)	Integer	16	System generated	Space remaining, which is available for allocation. The units used are allocation blocks. This is calculated based on the Total Staging Space and the current set of allocated staging disks as stored in the database.
Root Path	Character	250	Required	Path on disk where staging disks are created. Each staging disk is named disk*nnn,* where *nnn* is a unique number.
File I/O Block Size (bytes)	Integer	16	Required	The block size to be used for file input or output (I/O).
Retries	Integer	3	Required	The number of times to retry failed operations.
Sleeptime (seconds)	Integer	5	Required	The time to sleep, in seconds, between retries.
Service Threads	Integer	5	Required	The number of Service Threads available to process requests submitted to the Request Manager Server.

4.10.2.2.1.3 Cache Manager Configuration

Cache Manager Server instances can be configured to manage Read-Only Caches or to manage the Pull Area. The Pull Area Manager toggle controls the type of cache being managed. If **Pull Area Manager** is toggled to **No**, the configured instance is defined to manage a Read-Only Cache. Otherwise, the configuration defines the cache information to be used by the Pull Monitor Server. Figure 4.10.2-5 displays the server configuration window for configuring instances of the Cache Manager Server. Note that the last three fields are grayed out. These fields are enabled only when configuring the Pull Area.



Cache Manager Server Configuration

Server Name: CacheManagerServer ACM1 RPC Tag: ROCA

Original Cache Space (blocks): 50000

Available Cache Space (blocks): 50000

Allocation Block Size (bytes): 2048

Description: Cache Manager

Disk Capacity

Fault Level: 95.000000

Warning Level: 85.000000

Expiration Threshold (hours): 24.000000

Expired Files Confirm Delete: No

File I/O Block Size (bytes): 4194304

Retries: 1

Sleeptime (seconds): 10

Service Threads: 10

Pull Area Manager No

Cache Path: /usr/ecs/OPS/CUSTOM/acm/f2acg01/d

User Request Directory:

FTP Notification File:

FTP Notification Freq (Sec): 0

Figure 4.10.2-5. Cache Manager Server Configuration Window

Table 4.10.2-5 describes the fields shown on the Cache Manager Server Configuration pop-up window.

Table 4.10.2-5. Cache Manager Server Configuration Window Field Descriptions (1 of 3)

Field Name	Data Type	Size	Entry	Description
Server Name	Character	6	Required	Name of this instance of the Cache Manager Server. Recommended value for the Cache Manager instance, which manages the Pull Area is PULL.
RPC Tag	Character	4	Required	The four-character tag, which appears in RPC Ids submitted by the Cache Manager Server. Recommended values are ROCA, ROCB, etc. for Cache Manager instances, which manage Read-Only Caches and PULL for the Cache Manager instance which manages the Pull Area.
Original Cache Space (blocks)	Integer	16	Required	Total size of the cache on disk. The units used are allocation blocks.
Available Cache Space (blocks)	Integer	16	System generated	Free space remaining in the cache. The units used are allocation blocks. This is calculated based on the Original Cache Space less the combined size of the files currently cached as stored in the database.
Allocation Block Size (bytes)	Integer	16	Required	Block size in bytes to be used for cache allocation purposes.
Description	Character	100	Optional	A mnemonic description of the cache for use by the operator.
Disk Capacity – Fault Level	Real	16	Required	The level at which a message is sent to the operator via the STMGT GUI to indicate that the cache is critically full. Unless Expired Files Confirm Delete is set to Yes, this should be set to 99.5%, since the Cache Manager automatically cleans up files as needed to make space.
Disk Capacity – Warning Level	Real	16	Required	The level at which a message is sent to the operator via the STMGT GUI to indicate the cache is becoming full. Unless Expired Files Confirm Delete is set to Yes, this should be set to 99.5%, since the Cache Manager automatically cleans up files as needed to make space.

Table 4.10.2-5. Cache Manager Server Configuration Window Field Descriptions (2 of 3)

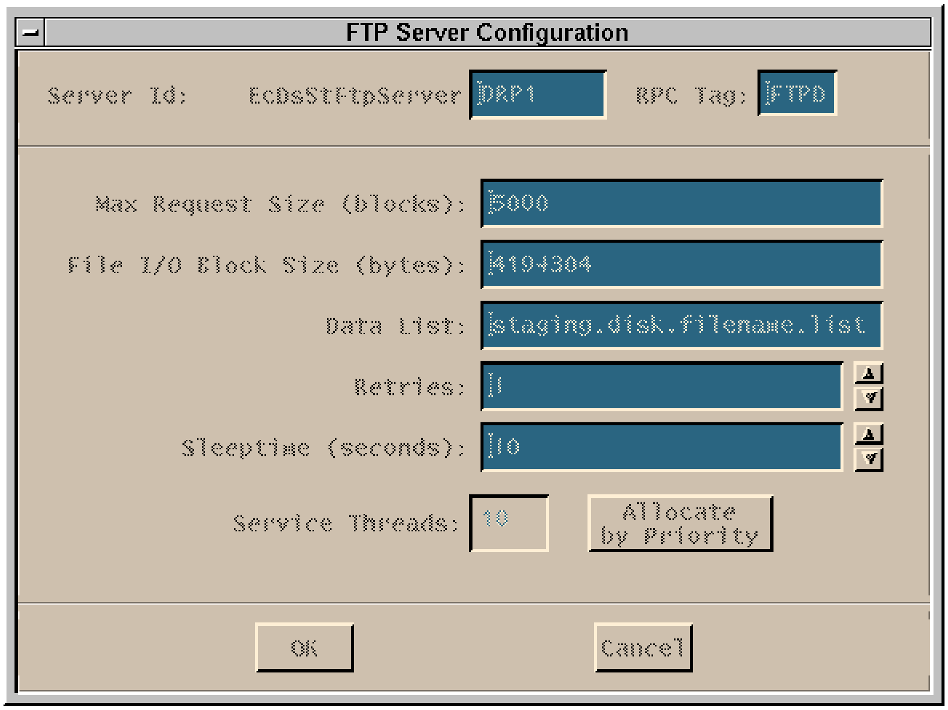
Field Name	Data Type	Size	Entry	Description
Expiration Threshold (hours)	Real	16	Required	The number of hours a lien is held against a cached file. A lien can be either an expressed intent to copy or link the file from the cache or a physical link to the file from another area (e.g., a staging disk). If the lien expires and space is required in the cache, the lien is removed automatically unless the Expired Files Confirm Delete flag is set to Yes. For normal operations, this field should be set to at least 24 hours.
Expired Files Confirm Delete	Boolean	N/A	Required	If set to No, the Cache Manager automatically makes space for new files in the cache by removing files whose liens have expired. If this flag is set to Yes, the operator must confirm the removal of expired liens before the liens can be deleted. (See the Cache Statistics tab later in this section for information on deleting expired liens.)
File I/O Block Size (bytes)	Integer	16	Required	The block size used for file I/O.
Retries	Integer	16	Required	The number of times to retry failed operations.
Sleeptime (seconds)	Integer	16	Required	The time to sleep, in seconds, between retries.
Service Threads	Integer	16	Required	The number of Service Threads available to process requests submitted to the Staging Disk Server.
Pull Area Manager	Boolean	N/A	Required	Indicates whether this instance of the Cache Manager manages a Read-Only Cache (ROC) or the Pull Area. Only one instance of the Cache Manager should be configured as a Pull Area Manager, though multiple instances can be configured to manage ROCs.
Cache Path	Character	250	Required	Path on disk where the cache physically resides.

Table 4.10.2-5. Cache Manager Server Configuration Window Field Descriptions (3 of 3)

Field Name	Data Type	Size	Entry	Description
User Request Directory	Character	250	Required if Pull Area Manager is Yes	If this instance has been flagged as a Pull Area Manager, the User Request Directory identifies the path on disk where user directories are created. These directories are the visible paths, which are used for staging FTP Pull distributions. The path specified here must match the login path specified in the configuration for anonymous FTP, if anonymous FTP is used for client acquisition of FTP Pull orders.
FTP Notification File	Character	250	Required if Pull Area Manager is Yes	A fully qualified path and filename where a list of acquired files are placed to permit the Cache Manager to automatically clean up files, which have been successfully pulled. The Pull Area Manager only uses this field.
FTP Notification Freq (Sec)	Integer	16	Required if Pull Area Manager is Yes	The frequency with which the Pull Area Manager reviews the list of acquired files and performs the corresponding clean up.

4.10.2.2.1.4 FTP Server Configuration

Figure 4.10.2-6 is the FTP server configuration window for configuring instances of the FTP Server.



FTP Server Configuration

Server Id: EcDsStFtpServer DRP1 RPC Tag: FTPD

Max Request Size (blocks): 5000

File I/O Block Size (bytes): 4194304

Data List: staging.disk.filename.list

Retries: 1

Sleeptime (seconds): 10

Service Threads: 10

Figure 4.10.2-6. FTP Server Configuration Window

Table 4.10.2-6 describes the fields shown on the FTP Server Configuration pop-up.

Table 4.10.2-6. FTP Server Configuration Window Field Descriptions (1 of 2)

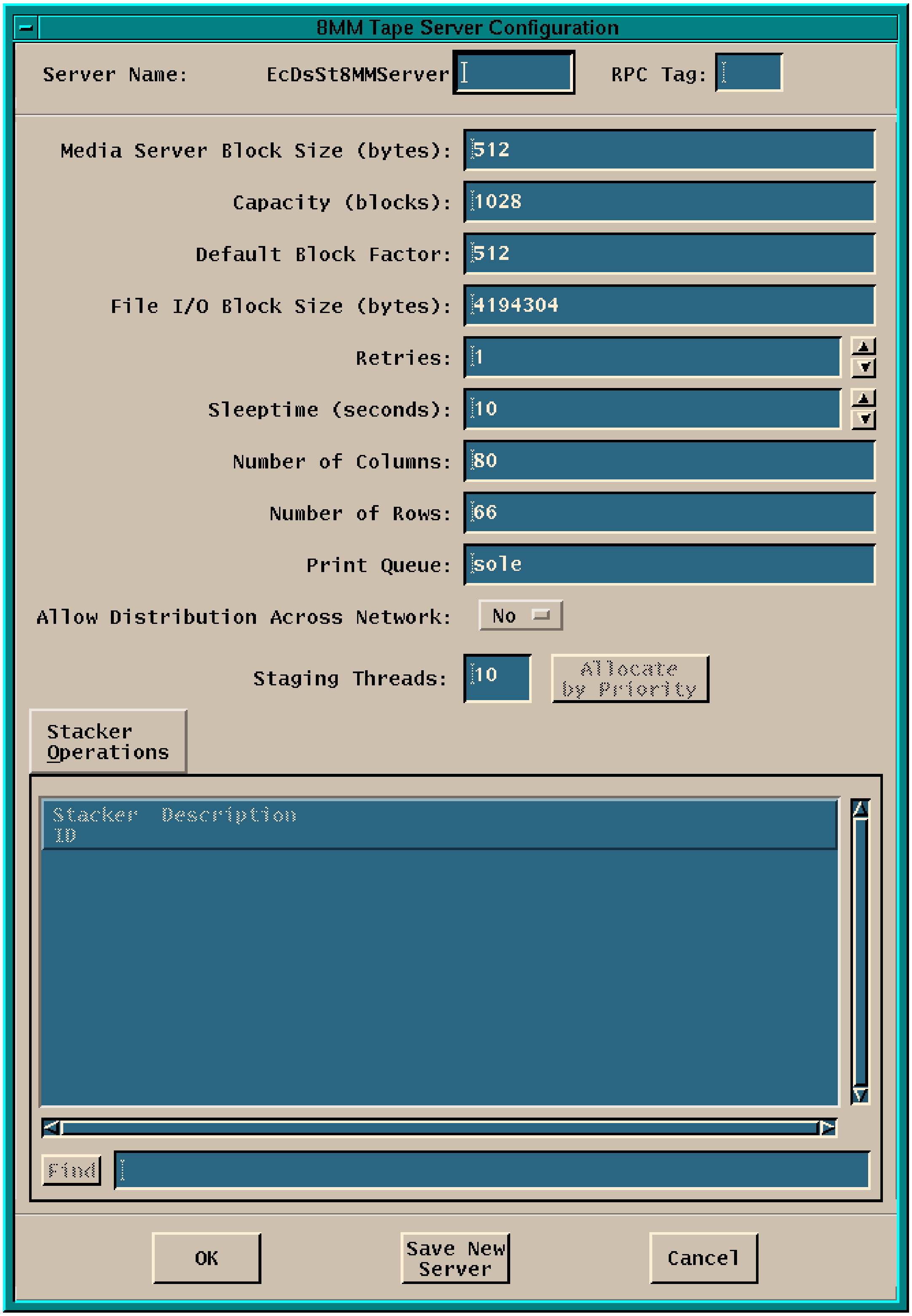
Field Name	Data Type	Size	Entry	Description
Server Id	Character	6	Required	Name of this instance of the FTP Server. The ID of the FTP server for external FTP distributions should be configured as NONE.
RPC Tag	Character	4	Required	The four-character tag, which appears in RPC Ids submitted by the FTP Server. Recommended values are FTPA, FTPB, etc.
Max Request Size (blocks)	Integer	16	Required	The maximum aggregate size of files, which can be electronically transferred as a single request. The size is specified in terms of file I/O blocks.
File I/O Block Size (blocks)	Integer	16	Required	The block size to be used for file input or output (I/O).

Table 4.10.2-6. FTP Server Configuration Field Description (2 of 2)

Field Name	Data Type	Size	Entry	Description
Data List	Character	100	Required	The name of the file, which is used by DDIST to specify the list of files to be electronically distributed. This must match the corresponding parameter in the DDIST configuration.
Retries	Integer	16	Required	The number of times to retry failed operations.
Sleeptime (seconds)	Integer	16	Required	The time to sleep, in seconds, between retries.
Service Threads	Integer	16	Required	The number of Service Threads available to process requests submitted to the FTP Server.

4.10.2.2.1.5 8MM and DLT Server Configuration

Figure 4.10.2-7 is the configuration screen for media servers that support stackers. This screen is used to configure instances of the 8MM Server and the DLT Server. Table 4.10.2-7 describes the field information related to this pop-up window.



8MM Tape Server Configuration

Server Name: EcDsSt8MMServer

RPC Tag:

Media Server Block Size (bytes): 512

Capacity (blocks): 1028

Default Block Factor: 512

File I/O Block Size (bytes): 4194304

Retries: 1

Sleeptime (seconds): 10

Number of Columns: 80

Number of Rows: 66

Print Queue: sole

Allow Distribution Across Network: No

Staging Threads: 10

Figure 4.10.2-7. Media Server Configuration Window (Stacker-based)

Table 4.10.2-7. Media Server Configuration Window Field Descriptions (Stacker-based) (1 of 2)

Field Name	Data Type	Size	Entry	Description
Server Name	Character	6	Required	Name of this instance of the Media Server.
RPC Tag	Character	4	Required	The four-character tag, which appears in RPC Ids submitted by the Media Server. Recommended values for 8MM servers are ATEA, ATEB, etc., and for the DLT server are DLTA, DLTB, etc.
Media Server Block Size (bytes)	Integer	16	Required	The block size used for tape input/output (I/O). This block size is also the basis unit for specifying media capacity.
Capacity (blocks)	Integer	16	Required	The maximum aggregate size of files, which can be transferred on a single piece of media. The size is specified in terms of Media Server Block Size.
Default Block Factor	Integer	16	Required	The number of blocks, which are read/written at once when performing I/O.
File I/O Block Size (bytes)	Integer	16	Required	The block size used for file I/O.
Retries	Integer	16	Required	The number of times to retry failed operations.
Sleeptime (seconds)	Integer	16	Required	The time to sleep, in seconds, between retries.
Number of Columns	Integer	16	Required	The column width to which packing slips should be formatted.
Number of Rows	Integer	16	Required	The page length to which packing slips should be formatted.
Print Queue	Character	64	Required	The Unix named print queue to which packing slips should be sent for requests serviced by this Media Server instance.
Allow Distribution Across Network	Boolean	N/A	Required	Indicates whether or not this Media Server instance permits media distribution from a staging disk, which is NFS-mounted in the event the data cannot be locally staged.

Table 4.10.2-7. Media Server Configuration Window Field Description (Stacker-based) (2 of 2)

Field Name	Data Type	Size	Entry	Description
Staging Threads	Integer	16	Required	The number of Service Threads available to locally stage data for media distribution by this Media Server instance. It also does not correspond to the number of devices available for media distribution. A separate thread pool is automatically created for actual media I/O, based on the number of media devices configured for use by this Media Server instance.
Stacker ID	Character	64	Required	A unique identifier that identifies a stacker associated with this Media Server instance.
Description	Character	100	Optional	Additional mnemonic information provided by the operator during configuration to assist in identifying the listed stacker.

The Media Server Configuration window includes two buttons not found on other server configuration windows: **Allow Distribution Across Network** and **Save New Server**.

Allow Distribution Across Network Toggles whether or not the server instance permits distribution to media from an NFS-mounted directory. Some media types (e.g. CD-ROM) required a sustained input/output (I/O) level, which cannot be guaranteed when I/O is being done across a network. For such media types, this flag should be toggled to **No**.

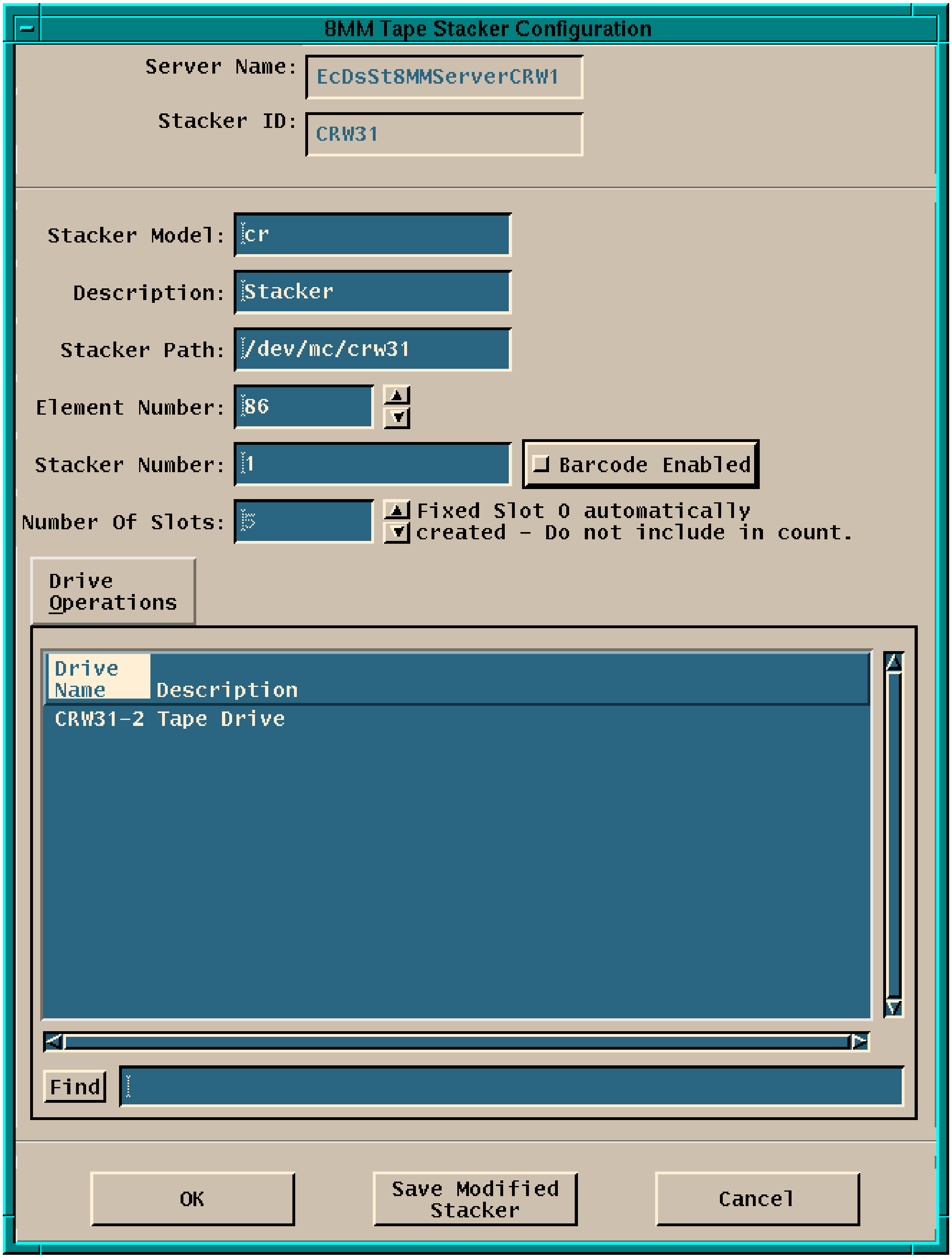
Save New Server This button forces the displayed configuration information to be added to the database without closing the server configuration window. It must be pressed prior to adding new stackers.

The Media Server Configuration window also includes a pull-down menu – Stacker Operations – with the following options:

- **Add Stacker…** Allows the operator to add and configure a new stacker resource. A list of pre-configured stacker models is shown when this menu option is selected. The operator can select from the list of pre-configured stacker models, or select the **Unknown** option. In either case, the window shown below in Figure 4.10.2-8 is presented. If a pre-configured model is selected, the fields in the Stacker Configuration window are pre-populated with the appropriate values for the selected model.
- **Modify Stacker/View Drives** If a stacker is selected, this option permits the operator to modify the configuration of the selected stacker resource. This also brings up the window shown in Figure 4.10.2-8.
- **Delete Stacker** If a stacker is selected, this option permits the operator to remove the selected stacker as a configured resource for this server instance. Note that

removing a stacker automatically removes all configured devices associated with that stacker.

Whether adding or modifying configuration for a stacker resource, the window shown below in Figure 4.10.2-8 is presented. (Note: When adding a stacker, the **Save Modified Stacker** button is re-labeled **Save New Stacker**).



Server Name: EcDsSt8MMServerCRW1

Stacker ID: CRW31

Stacker Model: cr

Description: Stacker

Stacker Path: /dev/mc/crw31

Element Number: 86

Stacker Number: 1

□ Barcode Enabled

Number Of Slots: 5

Fixed Slot 0 automatically created - Do not include in count.

Drive Name	Description
CRW31-2	Tape Drive

Figure 4.10.2-8. Stacker Configuration Window

Table 4.10.2-8 provides a detailed description of the Stacker Configuration window fields.

Table 4.10.2-8. Stacker Configuration Window Field Descriptions

Field Name	Data Type	Size	Entry	Description
Server Name	Character	64	Required	The name of the Media Server instance, which manages this stacker.
Stacker ID	Character	64	Required	A unique identifier, which identifies this particular stacker.
Stacker Model	Character	64	Optional	The model of stacker, if known.
Description	Character	100	Optional	A mnemonic description of the stacker used by the operator to clarify which stacker is intended.
Stacker Path	Character	250	Required	The Unix fully qualified path to the device path for the stacker robotic arm.
Element Number	Integer	16	Required	The element number of the stacker.
Stacker Number	Integer	16	Required	The stacker number for this Media Server instance (e.g., 1, 2, or 3).
Number of Slots	Integer	16	Required	The number of usable slots provided by the stacker. Do not count the cleaning tape slot in this count – it is automatically accounted for.

Note that by pushing down the **Barcode Enabled** button, the server has the capability to initiate an automated resynchronization with the database.

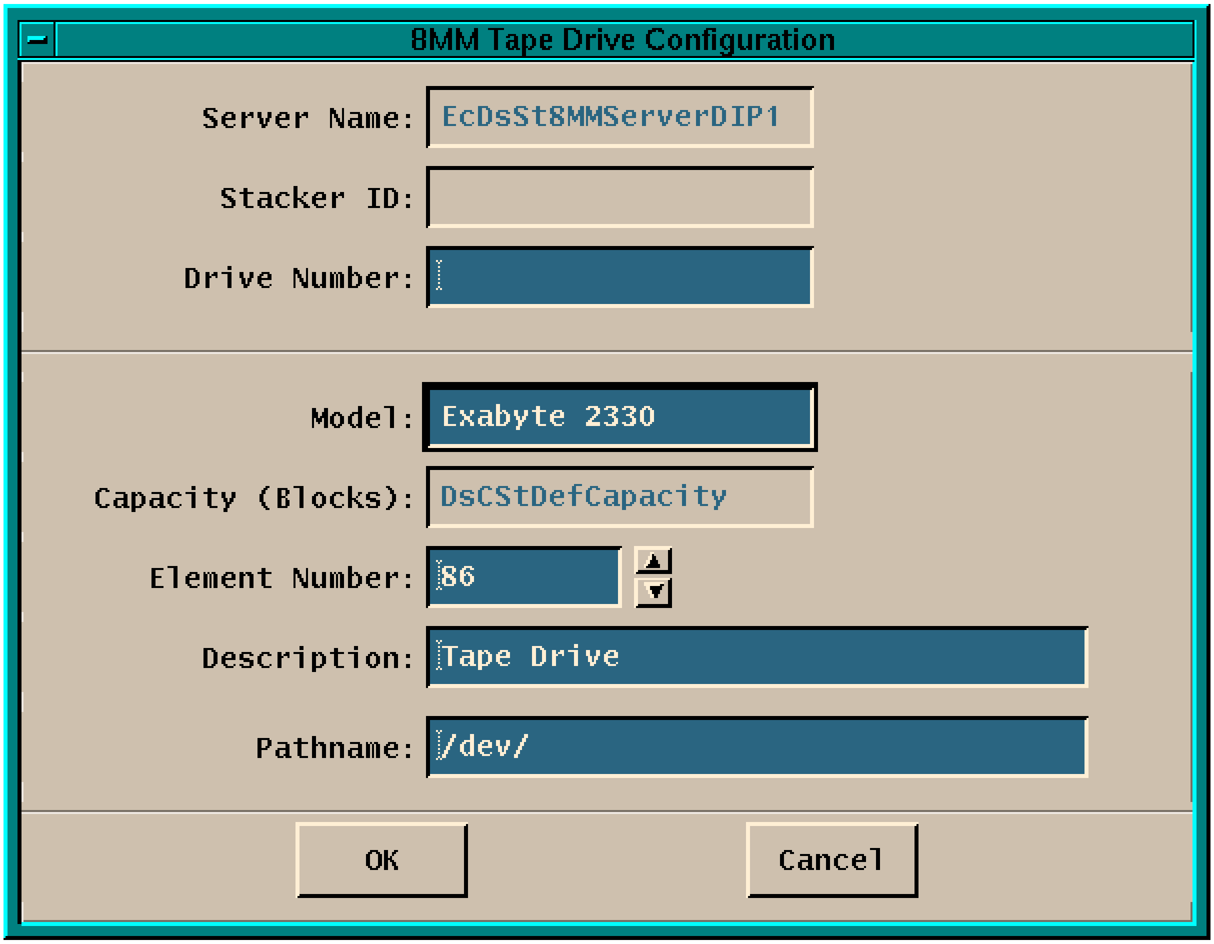
The Stacker Configuration window also includes a pull-down menu – Drive Operations – with the following options:

- **Add Drive…** Allows the operator to add and configure a new drive, which is located inside this stacker. A list of pre-configured drive models is shown when this menu option is selected. The operator can select from the list of pre-configured drive models, or select the **Unknown** option. In either case, the window shown below in Figure 4.10.2-9 is presented. If a pre-configured model is selected, the fields in the Device Configuration window are pre-populated with the appropriate values for the selected model.

- **Modify Drive** If a drive is selected, this option permits the operator to modify the configuration of the selected device. This also brings up the window shown in Figure 4.10.2-9.

- **Delete Drive** If a drive is selected, this option permits the operator to remove the selected device as a configured resource for this stacker.

Whether adding or modifying configuration for a device, the window shown in Figure 4.10.2-9 (Stacker Device Configuration Window) is presented.



Server Name: EcDsSt8MMServerDIP1

Stacker ID:

Drive Number:

Model: Exabyte 2330

Capacity (Blocks): DsCStDefCapacity

Element Number: 86

Description: Tape Drive

Pathname: /dev/

Figure 4.10.2-9. Stacker Device Configuration Window

Table 4.10.2-9 provides a detailed description of the Stacker Device Configuration window fields.

Table 4.10.2-9. Stacker Device Configuration Window Field Descriptions (1 of 2)

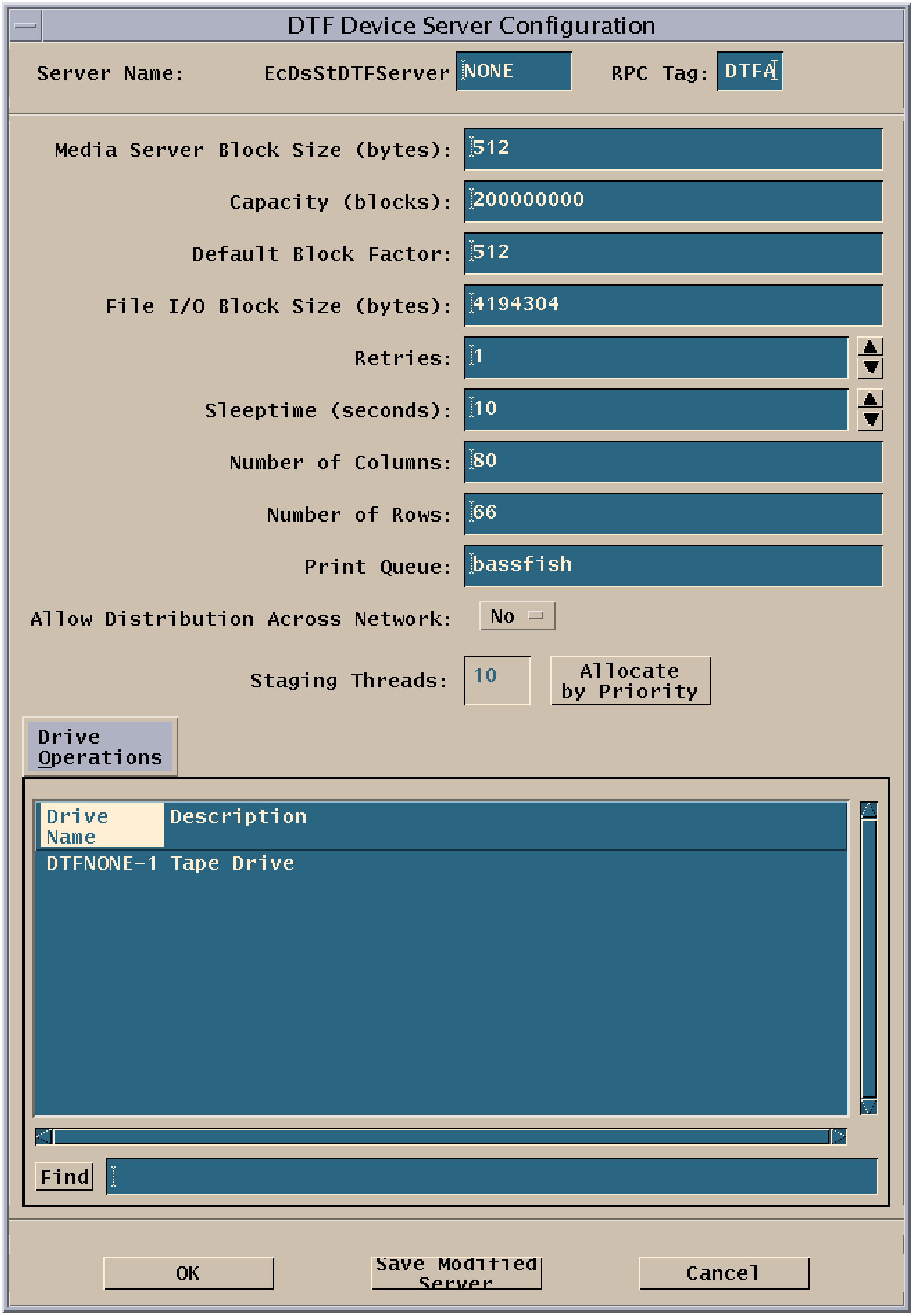
Field Name	Data Type	Size	Entry	Description
Server Name	Character	64	Required	The name of the Media Server instance, which manages this device.
Stacker ID	Character	64	Required	A unique identifier, which identifies the stacker in which this device resides.
Drive Number	Integer	16	Required	The ordinal index of the device within the stacker (e.g., 1, 2, 3…).
Model	Character	64	Optional	The model of device, if known.

Table 4.10.2-9. Stacker Device Configuration Window Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
Capacity (Blocks)	Integer	16	System generated	Tape capacity, as expressed in Media Server blocks. This cannot be changed in Release 6B, and is presented as a courtesy to the operator.
Element Number	Integer	16	Required	The element number of the device.
Description	Character	100	Optional	A mnemonic description of the device used by the operator to clarify which device is meant (e.g., Topmost).
Pathname	Character	250	Required	The Unix fully qualified path to the device path for the drive.

4.10.2.2.1.6 DTF and CD-ROM Server Configuration

Figure 4.10.2-10 is the configuration screen for media servers, which supports standalone devices. This screen is used to configure instances of the DTF Server and the CD-ROM Server. Table 4.10.2-10 describes the field information related to this pop-up window.



DTF Device Server Configuration

Server Name: EcDsStDTFServer NONE

RPC Tag: DTFA

Media Server Block Size (bytes): 512

Capacity (blocks): 200000000

Default Block Factor: 512

File I/O Block Size (bytes): 4194304

Retries: 1

Sleeptime (seconds): 10

Number of Columns: 80

Number of Rows: 66

Print Queue: bassfish

Allow Distribution Across Network: No

Staging Threads: 10

Drive Name	Description
DTFNONE-1	Tape Drive

Find

Figure 4.10.2-10. Media Server Configuration Window (Standalone-based)

The Media Server Configuration window includes two buttons not found on other server configuration windows: **Allow Distribution Across Network** and **Save New Server**.

Allow Distribution Across Network Toggles whether or not the server instance permits distribution to media from an NFS-mounted directory. Some media types (e.g. CD-ROM) required a sustained I/O level, which cannot be guaranteed when I/O is being done across a network. For such media types, this flag should be toggled to **No**.

Save New Server This button forces the displayed configuration information to be added to the database without closing the server configuration window. It must be pressed prior to adding new devices.

Table 4.10.2-10. Media Server Configuration Window Field Descriptions (Standalone-based) (1 of 2)

Field Name	Data Type	Size	Entry	Description
Server Name	Character	6	Required	Name of this instance of the Media Server.
RPC Tag	Character	4	Required	The four-character tag appearing in RPC Ids submitted by the Media Server. Recommended values for DTF servers are DEEA, DEEB, etc., and for the CDROM server are CDRA, CDRB, etc.
Media Server Block Size (bytes)	Integer	16	Required	The block size used for media I/O. This block size is also the basis unit for specifying media capacity.
Capacity (blocks)	Integer	16	Required	The maximum aggregate size of files, which can be transferred on a single piece of media. The size is specified in terms of Media Server Block Size.
Default Block Factor	Integer	16	Required	The number of blocks, which are read/written at once when performing I/O.
File I/O Block Size (bytes)	Integer	16	Required	The block size to be used for file I/O.
Retries	Integer	16	Required	The number of times to retry failed operations.
Sleeptime (seconds)	Integer	16	Required	The time to sleep, in seconds, between retries.
Number of Columns	Integer	16	Required	The column width to which packing slips should be formatted.
Number of Rows	Integer	16	Required	The page length to which packing slips should be formatted.
Print Queue	Character	64	Required	The Unix named print queue to which packing slips should be sent for requests serviced by this Media Server instance.

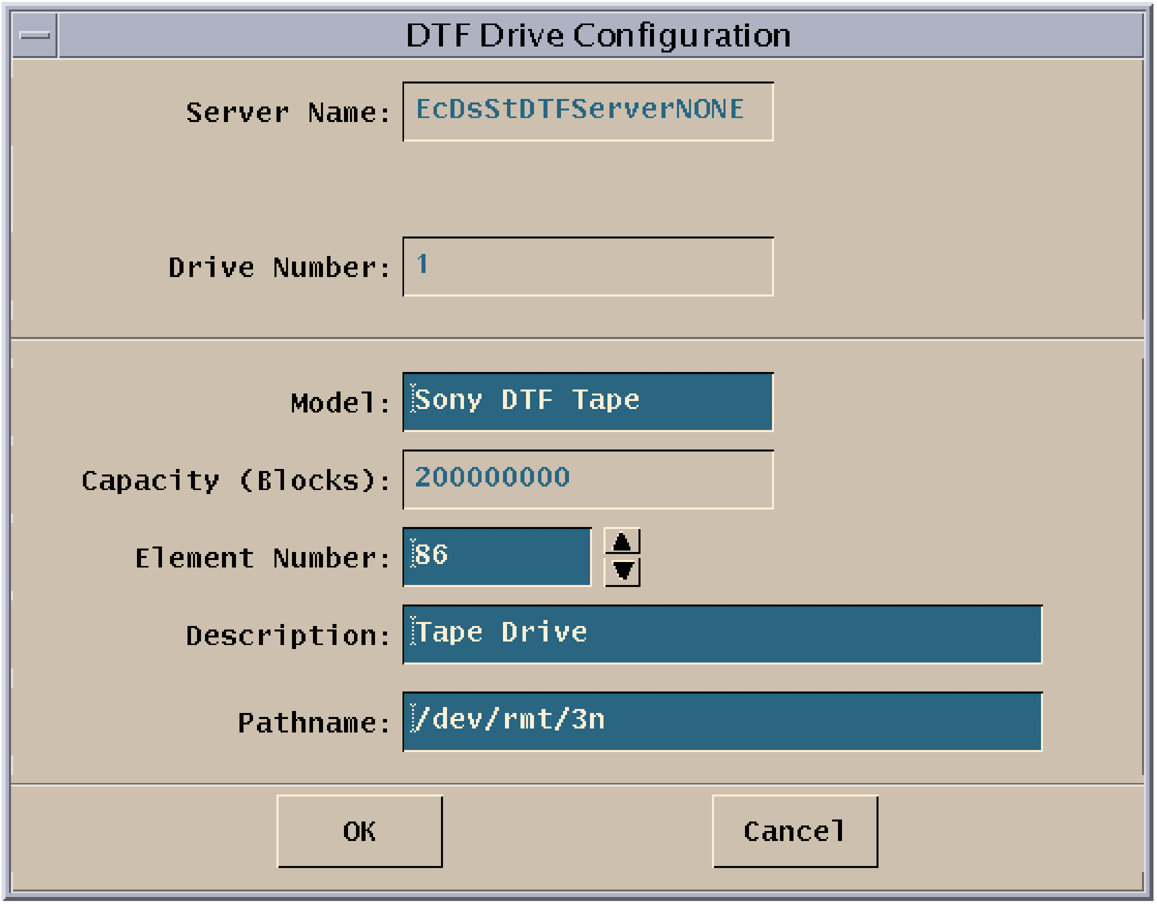
Table 4.10.2-10. Media Server Configuration Window Field Descriptions (Standalone-based) (2 of 2)

Field Name	Data Type	Size	Entry	Description
Allow Distribution Across Network	Boolean	N/A	Required	Indicates whether or not this Media Server instance permits media distribution from a staging disk, which is NFS-mounted in the event that the data cannot be locally staged. The CDROM server is not reliable for distribution from NFS-mounted disks, as I/O to the CD-ROM device must be sustained.
Staging Threads	Integer	16	Required	The number of Service Threads available to locally stage data for media distribution by this Media Server instance. It also does not correspond to the number of devices available for media distribution. A separate thread pool is automatically created for actual media I/O, based on the number of media devices configured for use by this Media Server instance.
Drive Name	Character	64	Required	A unique identifier, which identifies a drive associated with this Media Server instance.
Description	Character	100	Optional	Additional mnemonic information provided by the operator during configuration to assist in identifying the listed drive.

The Media Server Configuration window also includes a pull-down menu – Drive Operations – with the following options:

- **Add Drive…** Allows the operator to add and configure a new drive to be managed by this media server instance. A list of pre-configured drive models is shown when this menu option is selected. The operator can select from the list of pre-configured drive models, or select the **Unknown** option. In either case, the window shown below in Figure 4.10.2-11 is presented. If a pre-configured model is selected, the fields in the Device Configuration window are pre-populated with the appropriate values for the selected model.
- **Modify Drive** If a drive is selected, this option permits the operator to modify the configuration of the selected device. This also brings up the window shown in Figure 4.10.2-11.
- **Delete Drive** If a drive is selected, this option permits the operator to remove the selected device as a configured resource for this server instance.

Whether adding or modifying configuration for a device, the window shown below in Figure 4.10.2-11 is presented.



Server Name: EcDsStDTFServerNONE

Drive Number: 1

Model: Sony DTF Tape

Capacity (Blocks): 200000000

Element Number: 86

Description: Tape Drive

Pathname: /dev/rmt/3n

Figure 4.10.2-11. Standalone Device Configuration Window

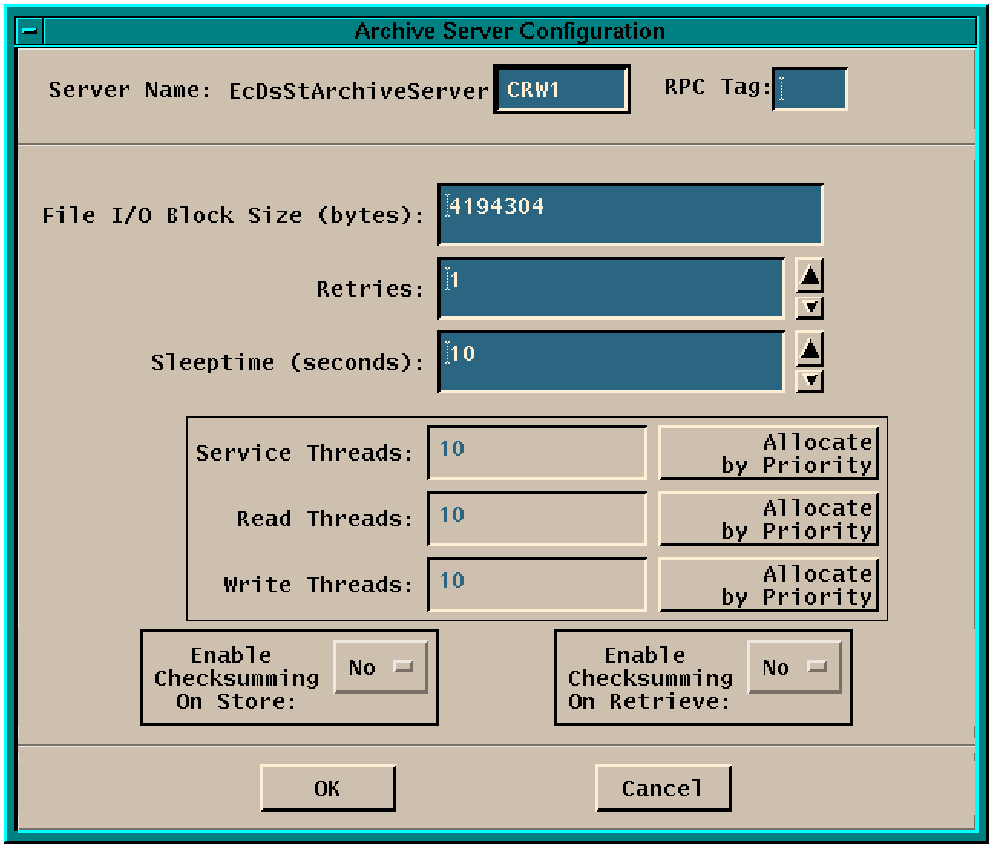
Table 4.10.2-11 provides a detailed description of the Standalone Device Configuration window fields.

Table 4.10.2-11. Standalone Device Configuration Window Field Descriptions

Field Name	Data Type	Size	Entry	Description
Server Name	Character	64	Required	The name of the Media Server instance, which manages this device.
Drive Number	Integer	16	Required	The ordinal index of the device for the Media Server instance (e.g., 1, 2, 3).
Model	Character	64	Optional	The model of device, if known.
Capacity (Blocks)	Integer	16	System generated	Media capacity, as expressed in Media Server blocks. This cannot be changed in Release 6B, and is presented as a courtesy to the operator.
Element Number	Integer	16	Required	The element number of the device.
Description	Character	100	Optional	A mnemonic description of the device used by the operator to clarify which device is meant (e.g., Left side of table).
Pathname	Character	250	Required	The Unix fully qualified path to the device path for the drive.

4.10.2.2.1.7 Archive Server Configuration

Figure 4.10.2-12 is the configuration screen for configuring instances of the Archive Server.



Archive Server Configuration

Server Name: EcDsStArchiveServer CRW1

RPC Tag:

File I/O Block Size (bytes): 4194304

Retries: 1

Sleeptime (seconds): 10

Service Threads: 10

Read Threads: 10

Write Threads: 10

Enable Checksumming On Store: No

Enable Checksumming On Retrieve: No

Figure 4.10.2-12. Archive Server Configuration Window

Table 4.10.2-12 describes the fields shown on the Archive Server Configuration pop-up window.

Table 4.10.2-12. Archive Server Configuration Window Field Descriptions (1 of 2)

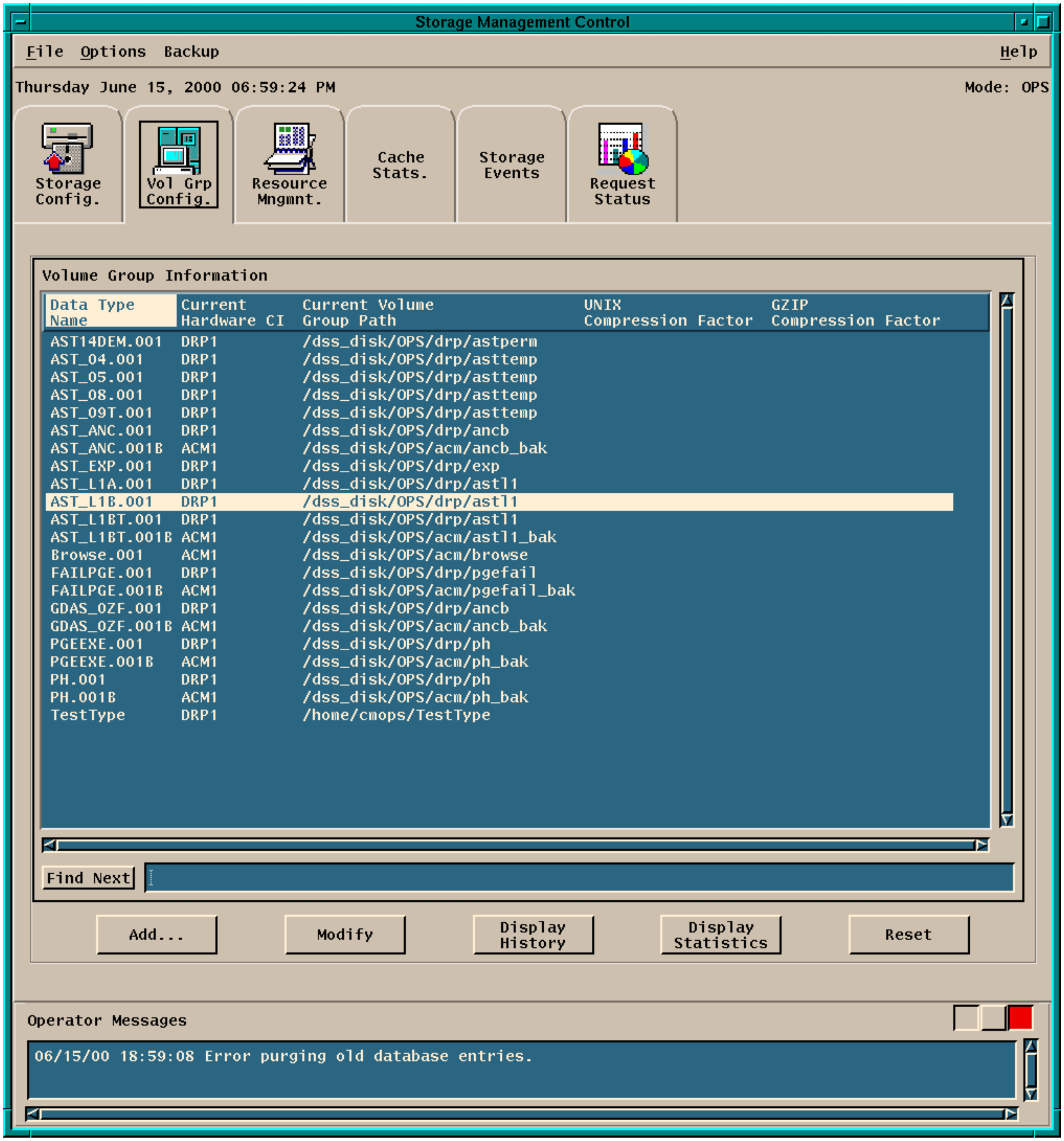
Field Name	Data Type	Size	Entry	Description
Server Name	Character	6	Required	Name of this instance of the Archive Server.
RPC Tag	Character	4	Required	The four-character tag, which appears in RPC Ids submitted by the Archive Server. Recommended values are ARCA, ARCB, etc.
File I/O Block Size (bytes)	Integer	16	Required	The block size to be used for file I/O.
Retries	Integer	3	Required	The number of times to retry failed operations.
Sleeptime (seconds)	Integer	5	Required	The time to sleep, in seconds, between retries.
Enable Checksumming on Store	Boolean	N/A	Required	If set to Yes, the Archive Server computes a CRC-32 checksum for each file stored in the archive.
Enable Checksumming on Retrieve	Boolean	N/A	Required	If set to Yes, the Archive Server directs the Cache Manager to compute a CRC-32 checksum for each file retrieved from the archive and validate it against the checksum previously computed.
Service Threads	Integer	5	Required	The numbers of Service Threads available to process requests, which do not directly involve AMASS devices. High-level Store and Retrieve requests are split into subordinate StoreFile and RetrieveFile requests, which are serviced by read and write threads, respectively.
Read Threads	Integer	5	Required	The number of Service Threads available to process requests, which are sent to a Cache Manager to read from an AMASS device. Rather, it should reflect the number of devices available in the AMASS silo for reading, adjusted to allow for caching of files.

Table 4.10.2-12. Archive Server Configuration Field Description (2 of 2)

Field Name	Data Type	Size	Entry	Description
Write Threads	Integer	5	Required	The number of Service Threads available to process requests, which write to an AMASS device. Rather, it should reflect the number of devices available in the AMASS silo for writing, adjusted to allow for caching of files.

4.10.2.2.2 Volume Group Configuration (Vol Grp Config.) Tab

This tab, shown if Figure 4.10.2-13, displays information about the volume groups configured to store archive data. It also allows the operator to create new volume groups, browse the history of volume group configuration, and redirect volume groups from one physical location to another.



Thursday June 15, 2000 06:59:24 PM

Mode: OPS

Volume Group Information

Data Type Name	Current Hardware CI	Current Volume Group Path	UNIX Compression Factor	GZIP Compression Factor
AST14DEM.001	DRP1	/dss_disk/OPS/drp/astperm		
AST_04.001	DRP1	/dss_disk/OPS/drp/asttemp		
AST_05.001	DRP1	/dss_disk/OPS/drp/asttemp		
AST_08.001	DRP1	/dss_disk/OPS/drp/asttemp		
AST_09T.001	DRP1	/dss_disk/OPS/drp/asttemp		
AST_ANC.001	DRP1	/dss_disk/OPS/drp/ancb		
AST_ANC.001B	ACM1	/dss_disk/OPS/acm/ancb_bak		
AST_EXP.001	DRP1	/dss_disk/OPS/drp/exp		
AST_L1A.001	DRP1	/dss_disk/OPS/drp/astl1		
AST_L1B.001	DRP1	/dss_disk/OPS/drp/astl1		
AST_L1BT.001	DRP1	/dss_disk/OPS/drp/astl1		
AST_L1BT.001B	ACM1	/dss_disk/OPS/acm/astl1_bak		
Browse.001	ACM1	/dss_disk/OPS/acm/browse		
FAILPGE.001	DRP1	/dss_disk/OPS/drp/pgefail		
FAILPGE.001B	ACM1	/dss_disk/OPS/acm/pgefail_bak		
GDAS_0ZF.001	DRP1	/dss_disk/OPS/drp/ancb		
GDAS_0ZF.001B	ACM1	/dss_disk/OPS/acm/ancb_bak		
PGEEXE.001	DRP1	/dss_disk/OPS/drp/ph		
PGEEXE.001B	ACM1	/dss_disk/OPS/acm/ph_bak		
PH.001	DRP1	/dss_disk/OPS/drp/ph		
PH.001B	ACM1	/dss_disk/OPS/acm/ph_bak		
TestType	DRP1	/home/cmops/TestType		

Operator Messages

```
06/15/00 18:59:08 Error purging old database entries.
```

Figure 4.10.2-13. Volume Group Configuration (Vol Grp Config.) Tab

Table 4.10.2-13 provides a detailed description of the Volume Group Configuration Tab fields.

Table 4.10.2-13. Volume Group Configuration Window Field Descriptions

Field Name	Data Type	Size	Entry	Description
Data Type Name	Character	16	Required	An ESDT shortname with version identifier.
Current Hardware CI	Character	16	Required	The Hardware CI of the Archive Server instance currently responsible for storing data of the specified data type.
Current Volume Group Path	Character	255	Required	The fully qualified Unix path to where data is stored for the specified data type.
UNIX Compression Factor	Character	3	Required	The extent to which a file of the specified data type is expected to be compressed using the Unix compress algorithm. For example, if the Unix compression factor were 80%, a 10MB file would have an expected compressed size of 2MB using the Unix compress algorithm.
GZIP Compression Factor	Character	3	Required	The extent to which a file of the specified data type is expected to be compressed using the GNU gzip compress algorithm. For example, if the GNU gzip compression factor were 80%, a 10MB file would have an expected compressed size of 2MB using the GNU gzip compress algorithm.
Find Next	Character	N/A	Optional	Allows the operator to perform a keyword search for items in the Volume Group Information box.

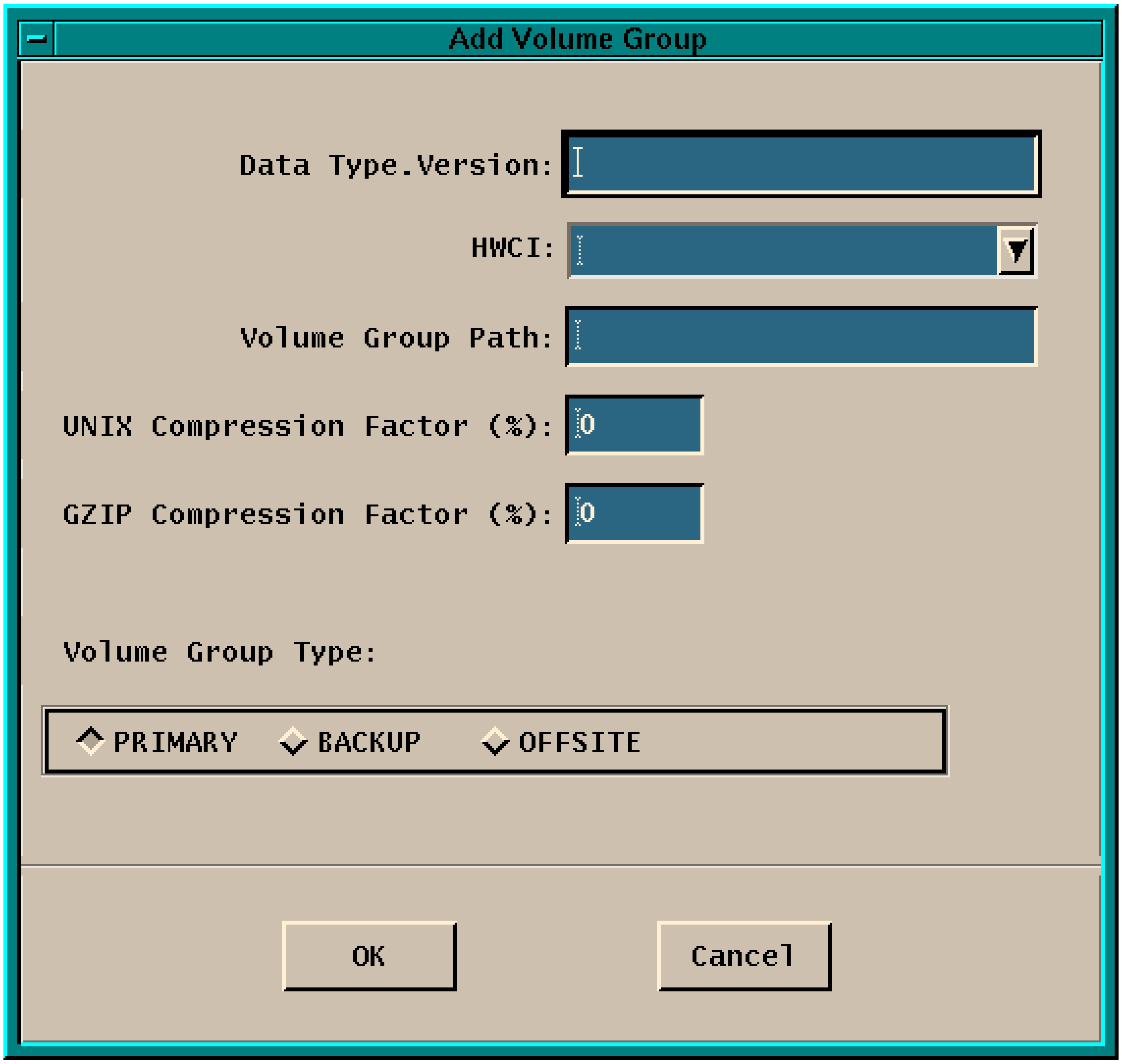
The following buttons provide the operator with several configuration operations with regard to the Volume Groups:

- **Add…** Allows the operator to add a Volume Group
- **Modify** Allows the operator to modify the configuration of one or more Volume Groups. Also used to version a set of ESDTs
- **Display History** Allows the operator to review the set of physical file storage locations, which have been associated with a Volume Group over time
- **Display Statistics** Allows the operator to review historical compression statistics, which can be used to guide the selection of a configured compression factor
- **Reset** Allows the operator to un-select the selections in the Volume Group Information box

Each of the windows associated with the above buttons is described in the following sections.

4.10.2.2.2.1 Add Volume Group

Figure 4.10.2-14 is the window used to manually add Volume Group configuration information. This window is presented when the **Add…**button is pressed.



Data Type.Version:

HWCI:

Volume Group Path:

UNIX Compression Factor (%): 0

GZIP Compression Factor (%): 0

Volume Group Type:

Figure 4.10.2-14. Add Volume Group Pop-up Window

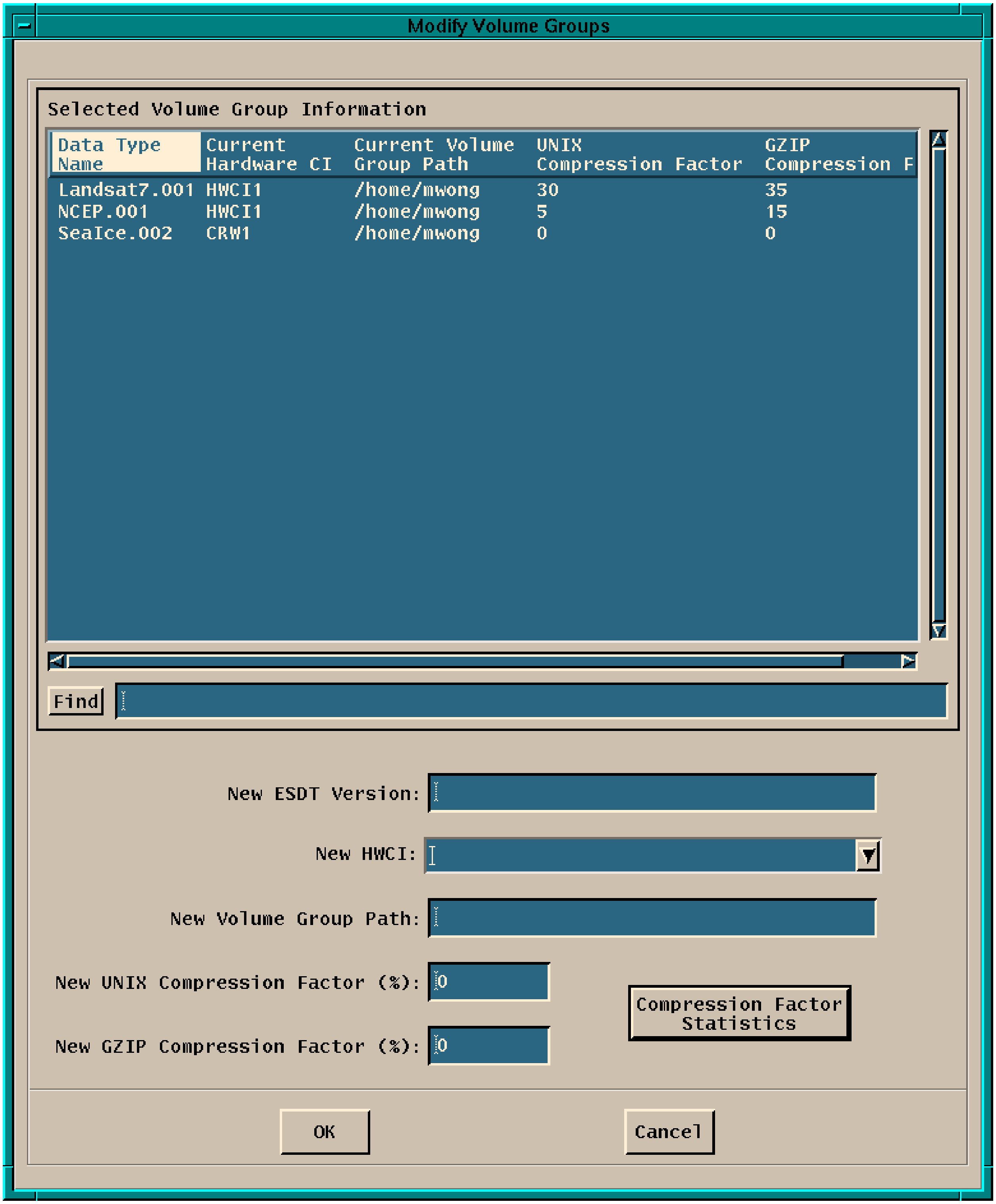
Table 4.10.2-14 provides the descriptions of the fields in the Add Volume Group pop-up window.

Table 4.10.2-14. Add Volume Group Window Field Descriptions

Field Name	Data Type	Size	Entry	Description
Data Type. Version	Character	16	Required	An ESDT shortname with version identifier.
HWCI	Character	16	Required	The Hardware CI of the Archive Server instance responsible for storing data of the specified data type.
Volume Group Path	Character	Unlimited	Required	The fully qualified Unix path to where data is stored for the specified data type.
Unix Compression Factor (%)	Integer	3	Required	The extent to which a file of the specified data type is expected to be compressed using the Unix compress algorithm. For example, if the Unix compression factor were 80%, a 10MB file would have an expected compressed size of 2MB using the Unix compress algorithm.
GZIP Compression Factor (%)	Integer	3	Required	The extent to which a file of the specified data type is expected to be compressed using the GNU gzip compress algorithm. For example, if the GNU gzip compression factor were 80%, a 10MB file would have an expected compressed size of 2MB using the GNU gzip compress algorithm.
Volume Group Type	Radio button	N/A	Required	Indicates whether this is the primary volume group from which data will be retrieved, a backup volume group for recovery from primary volume group failures, or an offsite volume group where media is expected to be exported and stored offsite.

4.10.2.2.2.2 Modify Volume Group

Figure 4.10.2-15 is the window, which can be used to modify Volume Group configuration information. This window is displayed when the **Modify** button is pressed.



Modify Volume Groups

Selected Volume Group Information

Data Type Name	Current Hardware CI	Current Volume Group Path	UNIX Compression Factor	GZIP Compression F
Landsat7.001	HWCI1	/home/mwong	30	35
NCEP.001	HWCI1	/home/mwong	5	15
SeaIce.002	CRW1	/home/mwong	0	0

New ESDT Version:

New HWCI:

New Volume Group Path:

New UNIX Compression Factor (%): 0

New GZIP Compression Factor (%): 0

Figure 4.10.2-15. Modify Volume Group Configuration Pop-up Window

Table 4.10.2-15 provides a detailed description of the Modify Volume Group Pop-up window fields. Note that multiple Volume Groups can be selected for simultaneous modification. Those fields for which new values are specified are updated; fields, which are left blank retain their existing values for each affected Volume Group.

This also provides a simple mechanism for versioning ESDTs as a group. By specifying a new ESDT Version, new entries can be created for Volume Groups for each of the selected Volume Groups, updating the ESDT version of the original Volume Group with the new ESDT version. All other configuration information for the new version Volume Groups are retained, unless explicitly altered by placing an entry in one or more of the other fields on the window.

Pressing the **Compression Factor Statistics** button brings up the Compression Statistics window for each of the selected Volume Groups. This permits the operator to review historical statistics regarding compression rates for each selected Volume Group. See Section 4.10.2.2.2.4 for more information regarding the Compression Statistics window.

Table 4.10.2-15. Modify Volume Group Pop-up Window Field Descriptions (1 of 2)

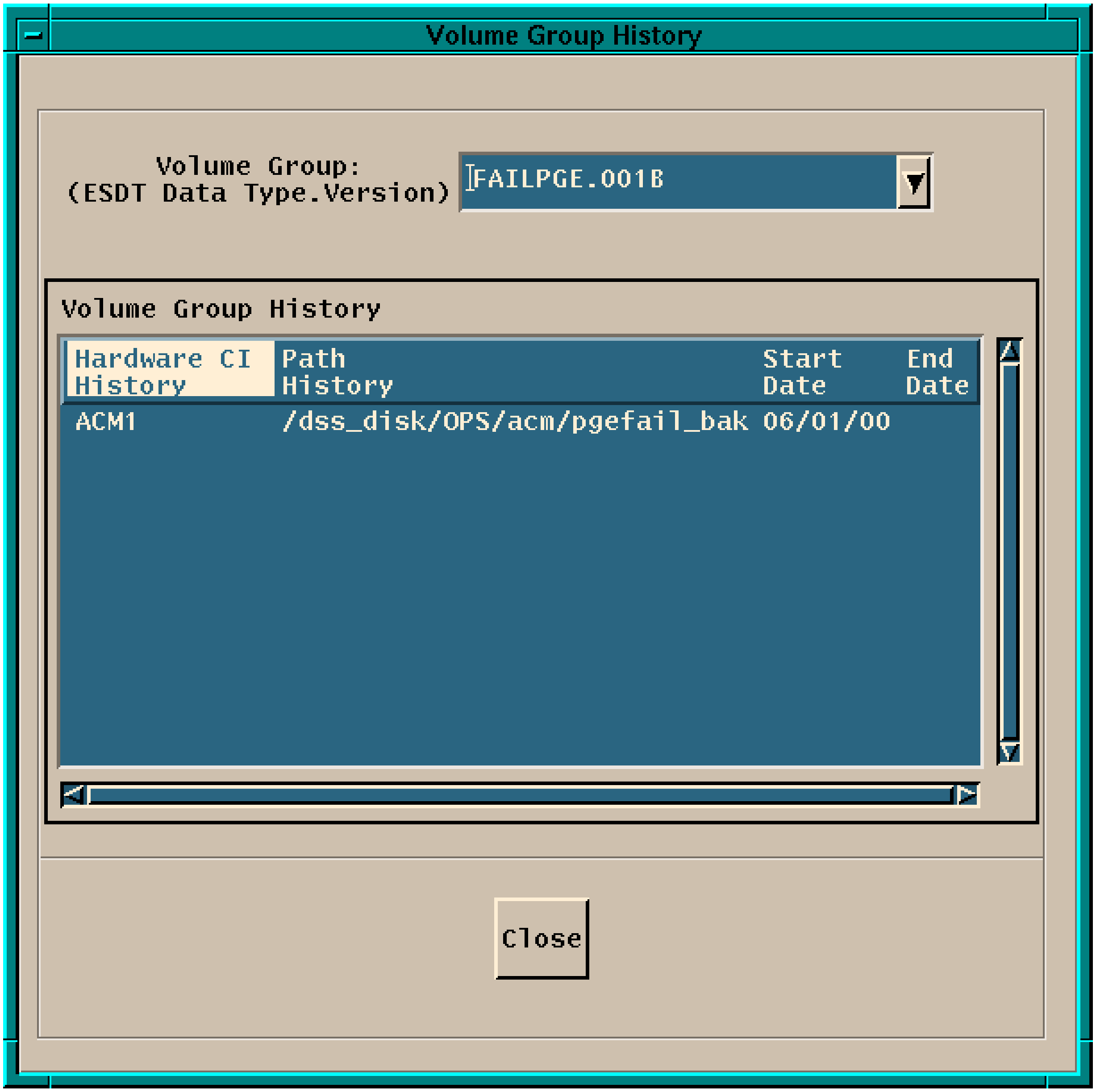
Field Name	Data Type	Size	Entry	Description
Data Type Name	Character	16	Required	An ESDT shortname with version identifier.
Current Hardware CI	Character	16	Required	The Hardware CI of the Archive Server instance currently responsible for storing data of the specified data type.
Current Volume Group Path	Character	Unlimited	Required	The fully qualified Unix path to where data is currently being stored for the specified data type.
Unix Compression Factor	Character	3	Required	The extent to which a file of the specified data type is currently expected to be compressed using the Unix compress algorithm. For example, if the Unix compression factor were 80%, a 10MB file would have an expected compressed size of 2MB using the Unix compress algorithm.
GZIP Compression Factor	Character	3	Required	The extent to which a file of the specified data type is currently expected to be compressed using the GNU gzip compress algorithm. For example, if the GNU gzip compression factor were 80%, a 10MB file would have an expected compressed size of 2MB using the GNU gzip compress algorithm.

Table 4.10.2-15. Modify Volume Group Field Description (2 of 2)

Field Name	Data Type	Size	Entry	Description
New ESDT Version	Character	3	Optional	The new version identifier to be applied to all displayed ESDTs. If specified, the set of selected volume groups are re-added as new volume groups for the new version identifier.
New Hardware CI	Character	16	Optional	The Hardware CI of the Archive Server instance made responsible for the volume group. If the operator does not specify this, the currently configured value is retained.
New Path	Character	255	Optional	This entry identifies the new path in which data is stored. If the operator does not specify this, the currently configured value is retained.
New Unix Compression Factor (%)	Integer	3	Optional	The new expected compression rate for files compressed using the Unix compress method. If the operator does not specify this, the currently configured value is retained.
New GZIP Compression Factor (%)	Integer	3	Optional	The new expected compression rate for files compressed using the GNU gzip compress method. If the operator does not specify this, the currently configured value is retained.

4.10.2.2.2.3 Volume Group History

Figure 4.10.2-16 is the window used to view historical Volume Group configuration information. This window is displayed when the **Display History** button is pressed.



Volume Group:
(ESDT Data Type.Version) FAILPGE.001B

Volume Group History

Hardware CI History	Path History	Start Date	End Date
ACM1	/dss_disk/OPS/acm/pgefail_bak	06/01/00	

Figure 4.10.2-16. Volume Group History Pop-up Window

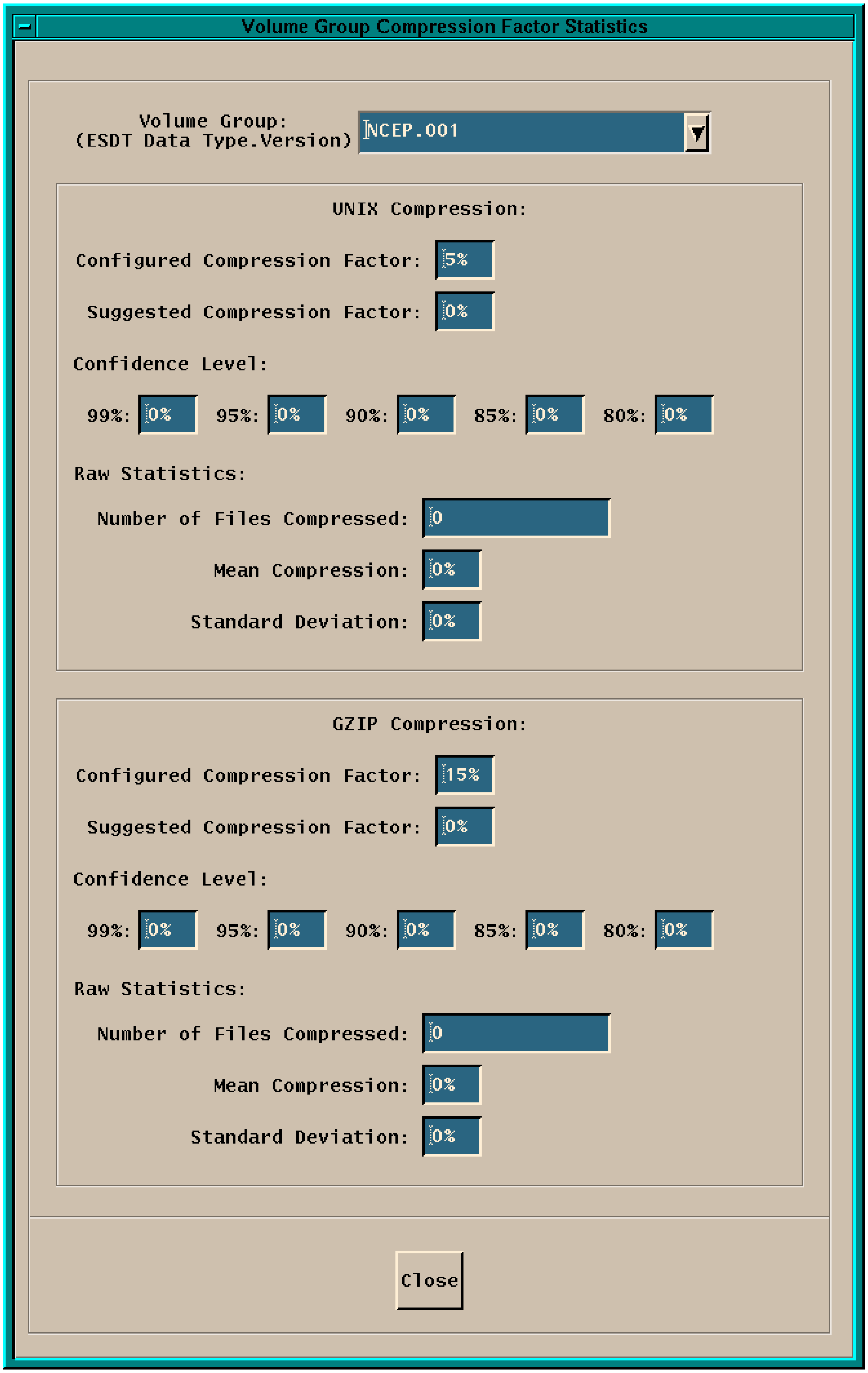
Table 4.10.2-16 provides a detailed description of the Volume Group History Pop-up window fields.

Table 4.10.2-16. Volume Group History Field Description

Field Name	Data Type	Size	Entry	Description
Volume Group (ESDT Data Type. Version)	Character	16	Required	An ESDT shortname with version identifier.
Hardware CI History	Character	16	Required	In reverse chronological order, the Hardware CI of the Archive Server instances that have been responsible for storing data of the specified data type. The current instance is listed first.
Path History	Character	Unlimited	Required	In reverse chronological order, the fully qualified Unix paths to where data has been stored for the specified data type. The current path is listed first.
Start Date	Date	16	Required	The date on which this configuration became active for the listed data type.
End Date	Date	16	Required	The date on which this configuration was superseded by new configuration information. If blank, this row reflects the current configuration for the volume group. If any row has a blank end date, the volume group is closed, and no further data is accepted for that volume group.

4.10.2.2.2.4 Compression Statistics

Figure 4.10.2-17 is the window used to view historical compression statistics information. This window is displayed when the **Display Statistics** button is pressed from the Volume Group Configuration tab, or when the **Compression Factor Statistics** button is pressed from the Modify Volume Groups window.



Volume Group:
(ESDT Data Type.Version) NCEP.001

UNIX Compression:

Configured Compression Factor: 5%

Suggested Compression Factor: 0%

Confidence Level:

99%: 0% 95%: 0% 90%: 0% 85%: 0% 80%: 0%

Raw Statistics:

Number of Files Compressed: 0

Mean Compression: 0%

Standard Deviation: 0%

GZIP Compression:

Configured Compression Factor: 15%

Suggested Compression Factor: 0%

Confidence Level:

99%: 0% 95%: 0% 90%: 0% 85%: 0% 80%: 0%

Raw Statistics:

Number of Files Compressed: 0

Mean Compression: 0%

Standard Deviation: 0%

Figure 4.10.2-17. Volume Group Compression Factor Statistics Pop-up Window

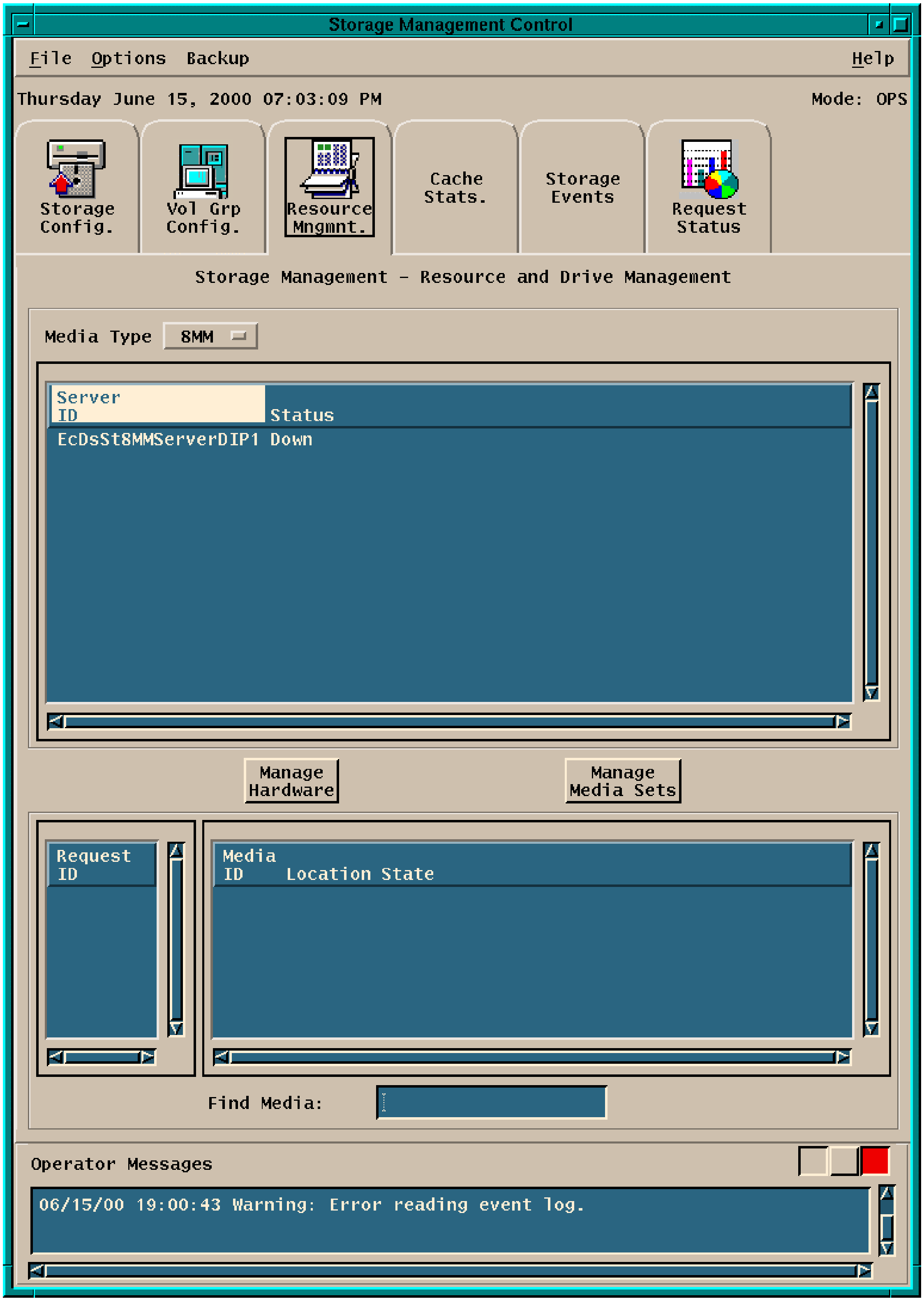
Table 4.10.2-17 provides a detailed description of the Volume Group Compression Factor Statistics Pop-up window fields.

Table 4.10.2-17. Volume Group Compression Factor Statistics Pop-up Window Field Descriptions

Field Name	Data Type	Size	Entry	Description
Volume Group (ESDT Data Type. Version)	Character	16	Required	An ESDT shortname with version identifier.
Configured Compression Factor	Character	4	Required	The extent to which a file of the specified data type is currently expected to be compressed. For example, if the Unix compression factor were 80%, a 10MB file would have an expected compressed size of 2MB using the Unix compress algorithm.
Suggested Compression Factor	Character	4	Calculated	The recommended compression factor based on a statistical analysis of historical compression data for the data type.
Confidence Level (99%, 95%, 90%, 85%, 80%)	Character	4	Calculated	Each of these fields specifies the minimum compression that can be reasonably expected at each of the five confidence levels, based on statistical analysis. As the confidence level increases, the expected minimum compression factor drops.
Number of Files Compressed	Integer	16	Calculated	The number of files of this data type which have been compressed to date.
Mean Compression	Character	4	Calculated	The average compression for the set of files of this data type which have been compressed to date.
Standard Deviation	Character	4	Calculated	A statistical factor, which is computed based on the variation from the average compression experienced for files of this data type. The greater the standard deviation, the less reliable and predictable the expected compression factor is.

4.10.2.2.3 Resource Management Tab (Resource Mngmnt)

The Resource Management tab allows the operator to monitor and adjust the availability of given storage devices as shown in Figure 4.10.2-18.



Thursday June 15, 2000 07:03:09 PM Mode: OPS

Storage Management - Resource and Drive Management

Media Type 8MM

Server ID	Status
EcDsSt8MMServerDIP1	Down

Request ID

Media ID	Location	State

Find Media:

Operator Messages

```
06/15/00 19:00:43 Warning: Error reading event log.
```

Figure 4.10.2-18. Resource Management (Resource Mngmnt) Tab

When the operator highlights a server ID, the related Request IDs appear. Clicking on one of the Request IDs, the corresponding media IDs are displayed on the screen, and the current known location and state are displayed for each media.

The following functionality is provided through the three buttons present on the Resource Management Tab.

- **Media Type** allows the operator to select different media type
- **Manage Hardware** allows the operator to manage Stackers, Drivers and Slots by means of the pop-up window shown in Figure 4.10.2-19. Table 4.10.2-19 provides details on the data fields of the Manage Stackers popup window
- **Manage Media Sets** allows the operator to define and manage groups of logically related media by means of the pop-up window shown in Figure 4.10.2-21. Table 4.10.2-21 provides details on the data fields of the Manage Media Sets popup

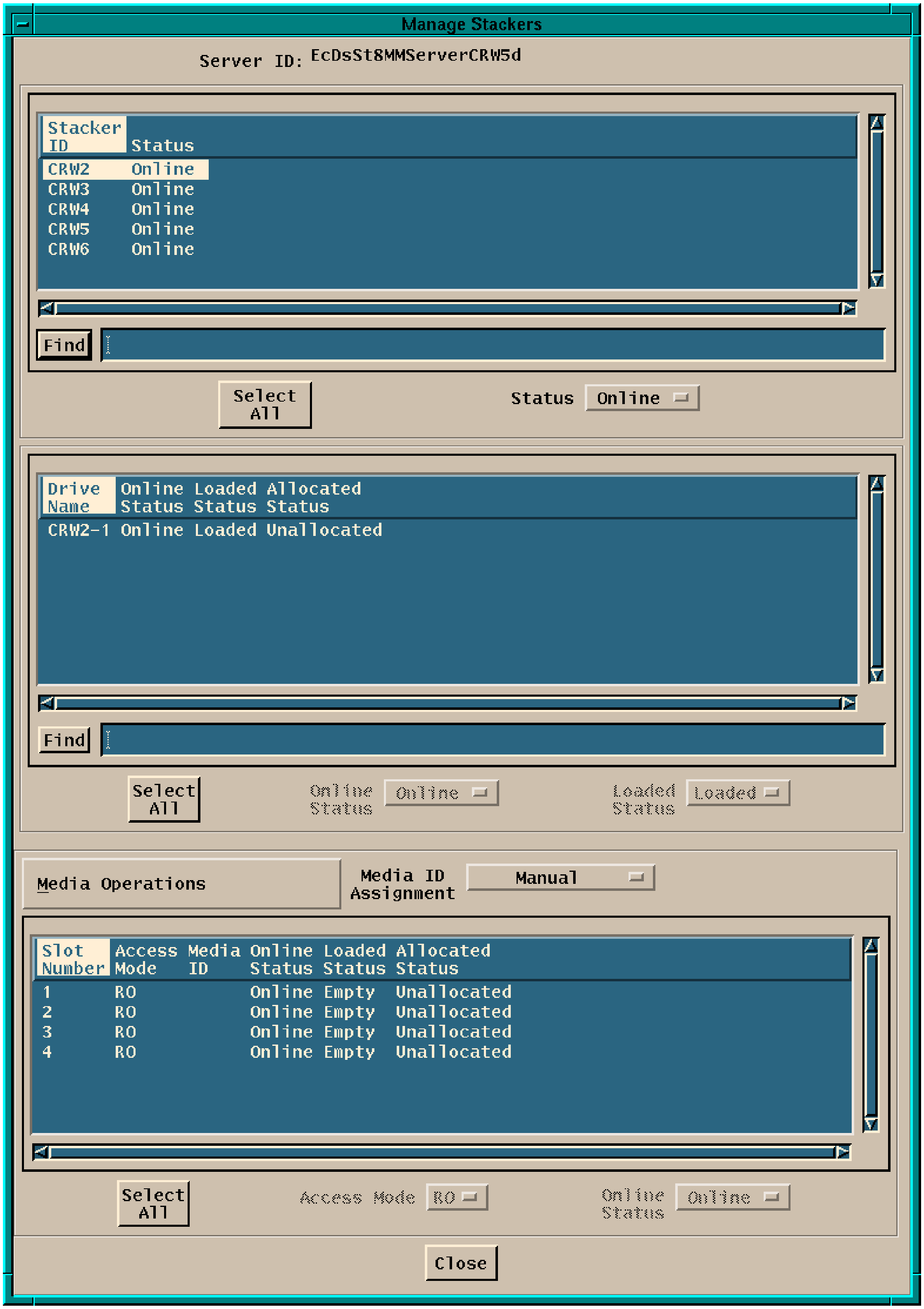
Table 4.10.2-18 describes the data fields shown in the Resource Management Tab.

Table 4.10.2-18. Resource Management Tab Field Description

Field Name	Data Type	Size	Entry	Description
Server ID	Character	N/A	System provided	Server ID for this media type.
Status	Character	N/A	System provided	Status of the server.
Request ID	Character	N/A	System provided	Identifier of the resource request.
Media ID	Character	N/A	System provided	Media related to this request tape.
Location	Character	N/A	System provided	Location of the media listed in the media ID field (drive, slot and stacker).
State	Character	N/A	System provided	State of the media (e.g., Tape writing, distribution finished, drive loaded, etc.).
Find Media	Character	50	Optional	The operator can use the Find Media capability to locate a specific piece of media, as well as identifying which request the media is associated with.
Operator Messages	Character	N/A	System provided	Any informational, warning or error messages are displayed here.

4.10.2.2.3.1 Manage Hardware

Figure 4.10.2-19 (Manage Stackers) is the window used to manage the availability and status of physical hardware. This window is displayed when the **Manage Hardware** button is pressed.



Server ID: EcDsSt8MMServerCRW5d

Stacker ID	Status
CRW2	Online
CRW3	Online
CRW4	Online
CRW5	Online
CRW6	Online

Status Online

Drive Name	Online Status	Loaded Status	Allocated Status
CRW2-1	Online	Loaded	Unallocated

Online Status Online

Loaded Status Loaded

Media ID Assignment Manual

Slot Number	Access Mode	Media ID	Online Status	Loaded Status	Allocated Status
1	RO		Online	Empty	Unallocated
2	RO		Online	Empty	Unallocated
3	RO		Online	Empty	Unallocated
4	RO		Online	Empty	Unallocated

Access Mode RO

Online Status Online

Figure 4.10.2-19. Manage Stackers Pop-up Window

The following functionality is provided through the several buttons present on the Manage Stackers window:

- **Find**. The operator can enter information into the field area to search the list for a specific stacker, device, or piece of media
- **Online Status**. The scheduling of Stackers, Slots and Drives is allowed through **Online Status** buttons. Once a Stacker, Slot or Device has been selected, it can be either put **Online** or taken **Offline** by clicking on the provided button
- **Loaded Status** button allows the operator change the state of a drive to loaded or unloaded. Once a Device has been selected, it can be either marked **Loaded** or marked **Unloaded** by clicking on the provided button
- **Media ID Assignment** If set to **Manual**, the operator must manually enter the media ID for each piece of media loaded. If set to **Auto Increment**, the operator can enter the first media ID, and any additional slots to be filled are assigned media Ids, which sequentially follow the media ID entered by the operator. When using a handheld bar code reader, the **Media ID Assignment** button should be set to **Manual**
- **Access Mode** button allows the operator to change the access mode of a piece of media to read only (RO) or read/write (RW)

Table 4.10.2-19 provides a detailed description of the Manage Stackers window fields.

Table 4.10.2-19. Manage Stackers Pop-up Window Field Descriptions (1 of 2)

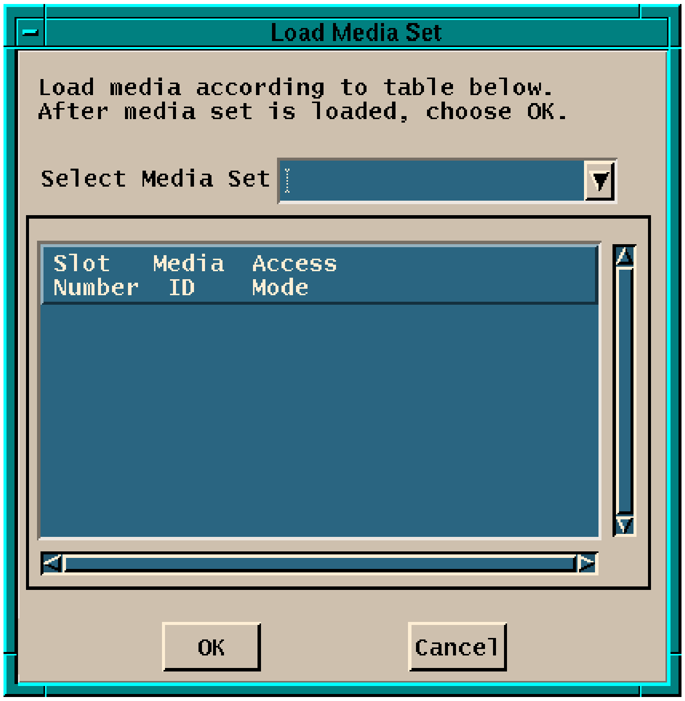
Field Name	Data Type	Size	Entry	Description
Stacker ID	Character	N/A	System provided	Identifier of the stacker that is being scheduled
Status	Character	N/A	System provided	Current availability of the stacker (online or offline).
Find	Character	N/A	User Input	Allows the operator to enter search criteria to find a stacker or drive.
Drive Name	Character	N/A	System provided	Identifier of the drive that is being scheduled. The Drive Names are displayed corresponding to the highlighted Stacker ID.
Online Status	Character	N/A	System provided	Current availability of the device or slot (online or offline).
Loaded Status	Character	N/A	System provided	Indicates whether the drive or slot is Occupied or Empty.
Allocated Status	Character	N/A	System provided	Indicates whether or not the drive or slot has been allocated for use by a request.
Slot Number	Integer	N/A	System provided	The slot numbers corresponding to the highlighted Stacker ID.
Access Mode	Character	N/A	System provided	Read-only or read/write.

Table 4.10.2-19. Manage Stackers Pop-up window Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
Media ID	Character	N/A	System provided	Identifier for the piece of media. The barcode printed on the media is typically used as the media identifier.

The Media Operations pull-down menu offers several facilities to the operator for loading and unloading media:

- **Load Media** allows the operator to load one or more pieces of media
- **Unload Media** allows the operator to unload one or more pieces of media
- **Replace Media** allows the operator to both load and unload pieces of media as a single operation
- **Load Media Set** allows the operator to load a group of associated media, which have been identified as a media set. Selecting the **Load Media Set** menu option brings up the popup shown in Figure 4.10.2-20



Load media according to table below.
After media set is loaded, choose OK.

Figure 4.10.2-20. Load Media Set Pop-up Window

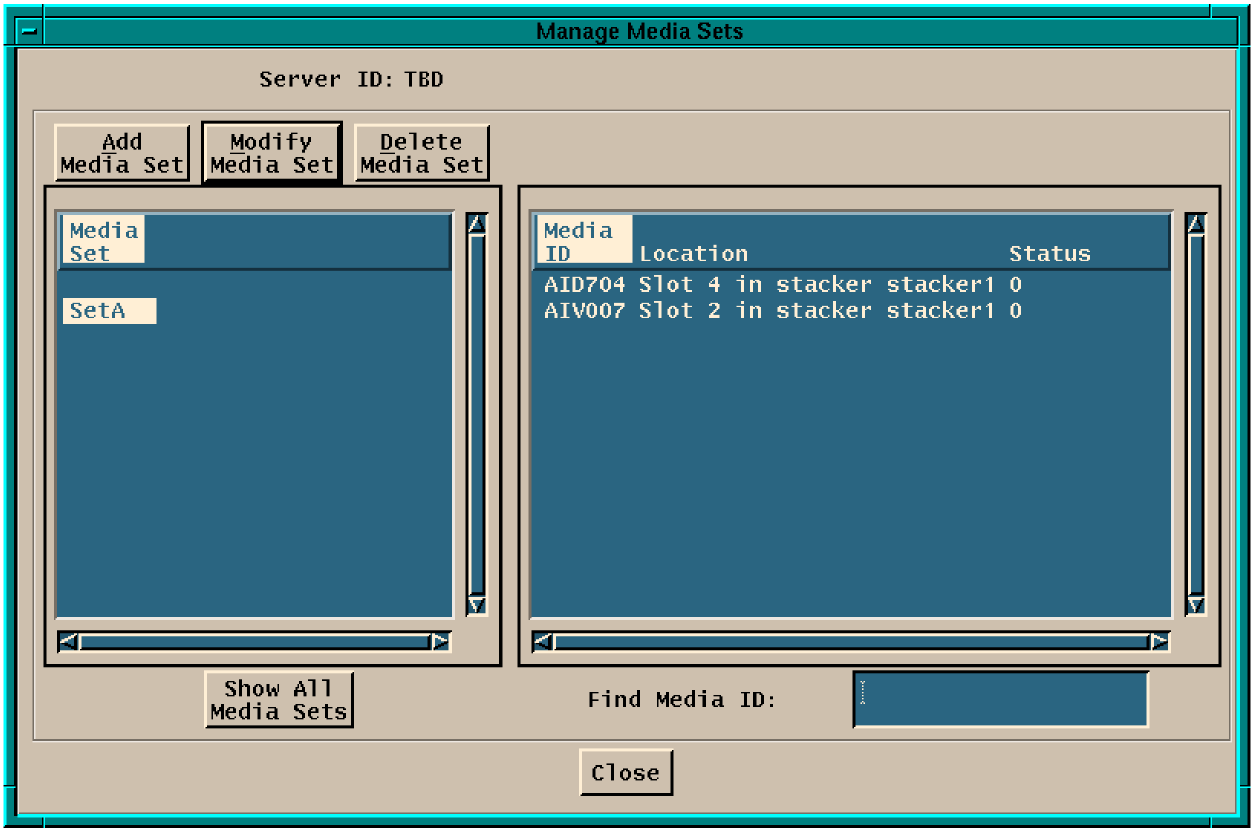
Table 4.10.2-20 provides a detailed description of the Load Media Set window fields.

Table 4.10.2-20. Load Media Set Pop-up Window Field Descriptions

Field Name	Data Type	Size	Entry	Description
Select Media Set	Character	N/A	System provided	Allows the operator to select the media set to be loaded from a pull-down list of available media sets.
Slot Number	Integer	N/A	System provided	The slot numbers corresponding to the highlighted Stacker ID.
Media ID	Character	N/A	System provided	Indicates which media from the media set should be loaded into the associated slot ID.
Access Mode	Character	N/A	Optional	Indicates whether the media is loaded with an Access Mode of read-only or read/write.

4.10.2.2.3.2 Manage Media Sets Screen

Figure 4.10.2-21 is the Manage Media Sets screen. .



Server ID: TBD

SetA

```
AID704 Slot 4 in stacker stacker1 0
AIV007 Slot 2 in stacker stacker1 0
```

Figure 4.10.2-21. Manage Media Sets Pop-up Window

Table 4.10.2-21 describes the Manage Media Sets window fields.

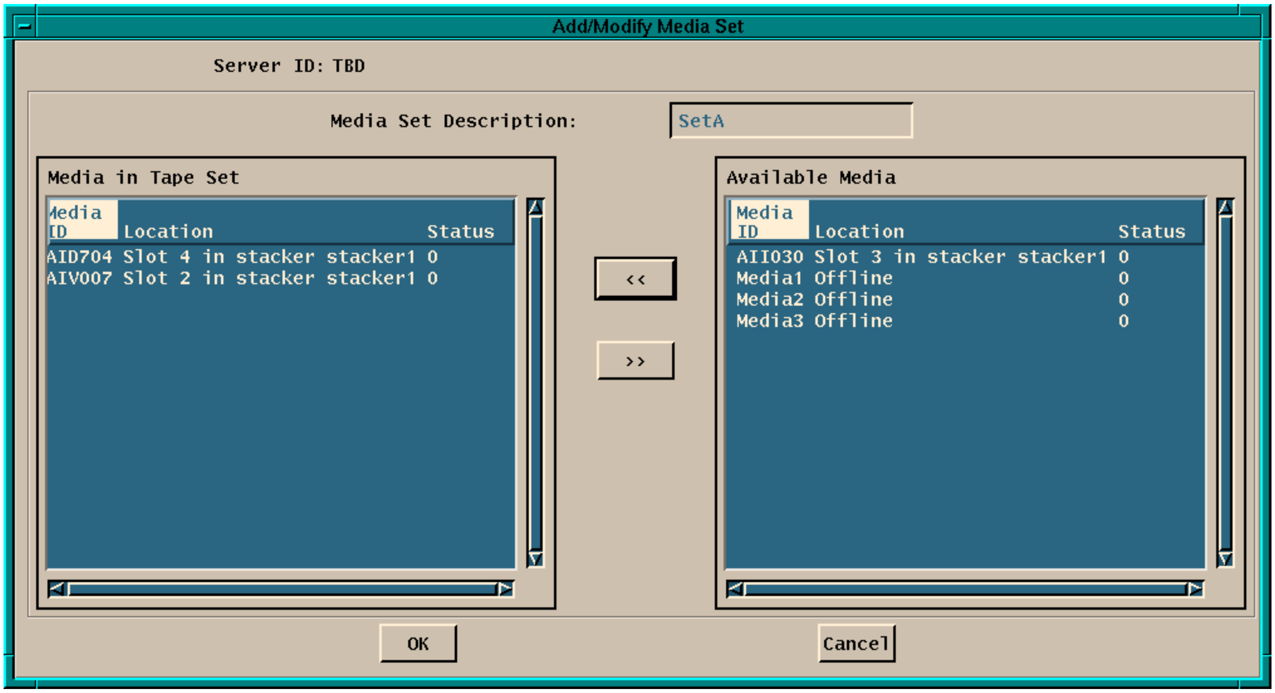
Table 4.10.2-21. Manage Media Sets Pop-up Window Field Descriptions

Field Name	Data Type	Size	Entry	Description
Media Set	Character	N/A	System provided	The mnemonic identifier used to refer to a logical aggregation of media.
Media ID	Character	N/A	System provided	Identifier for a piece of media in the highlighted media set. The barcode printed on the media is typically used as the media identifier.
Location	Character	N/A	System provided	Location of the media.
Status	Character	N/A	System provided	Status of the media.

The Manage Media Sets window provides three buttons to manage media sets:

- **Add Media Set** - Allows the operator to define a new media set. This brings up the window shown in Figure 4.10.2-22
- **Modify Media Set** - Allows the operator to add to or remove from the media in the selected media set. This also brings up the window shown in Figure 4.10.2-22
- **Delete Media Set** - If a media set is selected, this option permits the operator to remove the definition for the selected media set

Whether adding or modifying a defined media set, the window shown below in Figure 4.10.2-22 is displayed.



Add/Modify Media Set

Server ID: TBD

Media Set Description: SetA

Media in Tape Set

Media ID	Location	Status
AID704	Slot 4 in stacker stacker1	0
AIV007	Slot 2 in stacker stacker1	0

Available Media

Media ID	Location	Status
AII030	Slot 3 in stacker stacker1	0
Media1	Offline	0
Media2	Offline	0
Media3	Offline	0

Figure 4.10.2-22. Add/Modify Media Set Pop-up Window

Table 4.10.2-22 describes the Add/Modify Media Set window fields.

Table 4.10.2-22. Add/Modify Media Set Pop-up Window Field Descriptions

Field Name	Data Type	Size	Entry	Description
Media Set Description	Character	N/A	System provided	The mnemonic identifier used to refer to a logical aggregation of media.
Media ID	Character	N/A	System provided	Identifier for a piece of media in the media set. The barcode printed on the media is typically used as the media identifier.
Location	Character	N/A	System provided	Location of the media.
Status	Character	N/A	System provided	Status of the media.

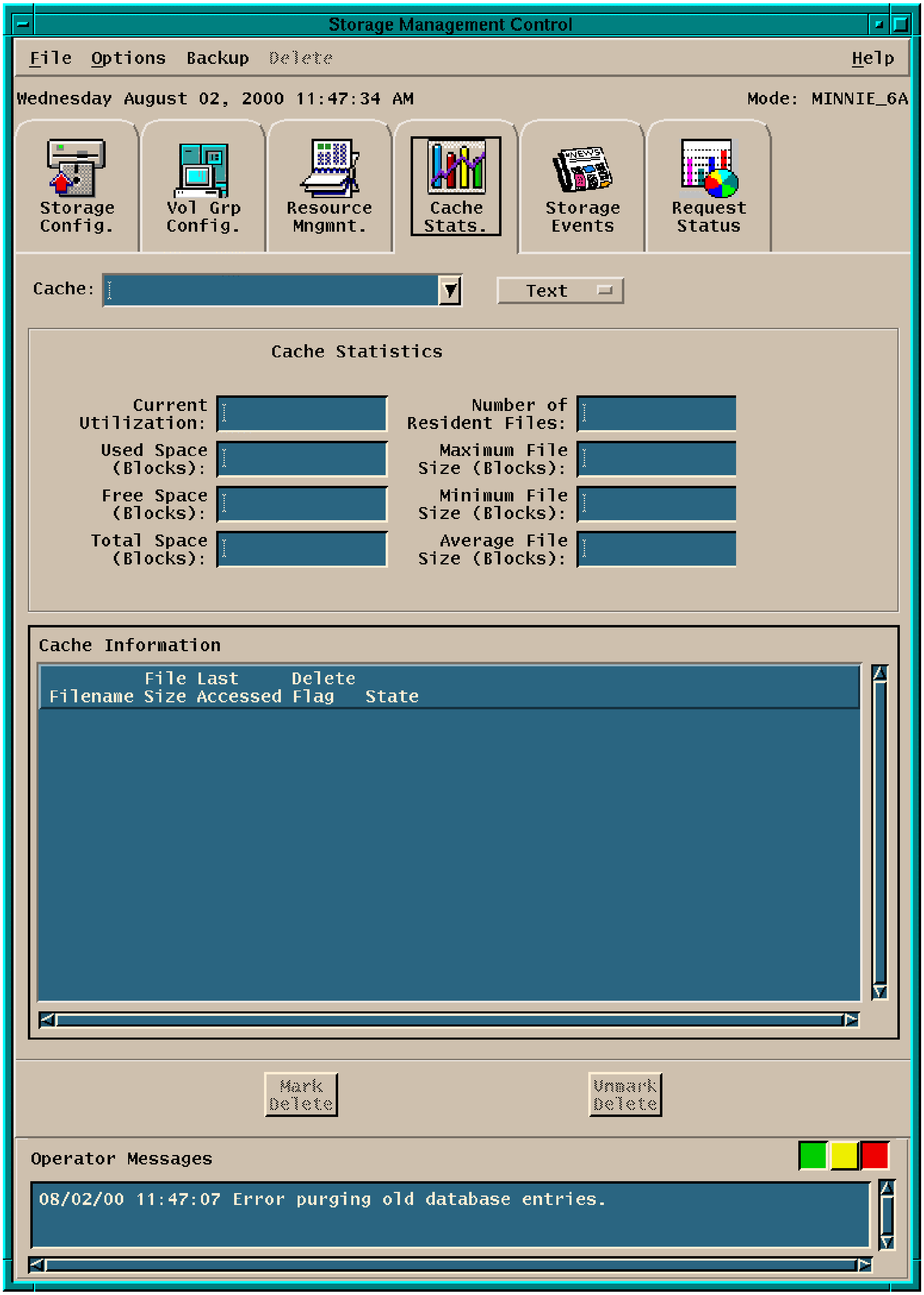
The << and >> buttons permit media to be moved between the list of media in the named media set and the list of available media which are not in the media set.

4.10.2.2.4 Cache Monitoring (Cache Stats.) Tab

This tab displays all the files in the selected cache, which can be a Read-Only Cache or the Pull Area (see Figure 4.10.2-23).

It reports general statistics on the entire cache and allows the operator to delete expired liens against files in the cache area. If the cache reaches an operator-configured threshold, the operator is warned with a message in the operator messages area. If the operator does not delete expired liens and allows the cache to fill, the server is not able to copy new files to the cache area.

When the **Mark Delete** button is pressed, all liens against the selected item in the list are marked for deletion. Multiple items can be selected. When the **Unmark Delete** button is pressed the delete flag is removed for all items selected in the list.



Wednesday August 02, 2000 11:47:34 AM

Mode: MINNIE_6A

```
08/02/00 11:47:07 Error purging old database entries.
```

Figure 4.10.2-23. Cache Monitoring Tab (Cache Stats.)

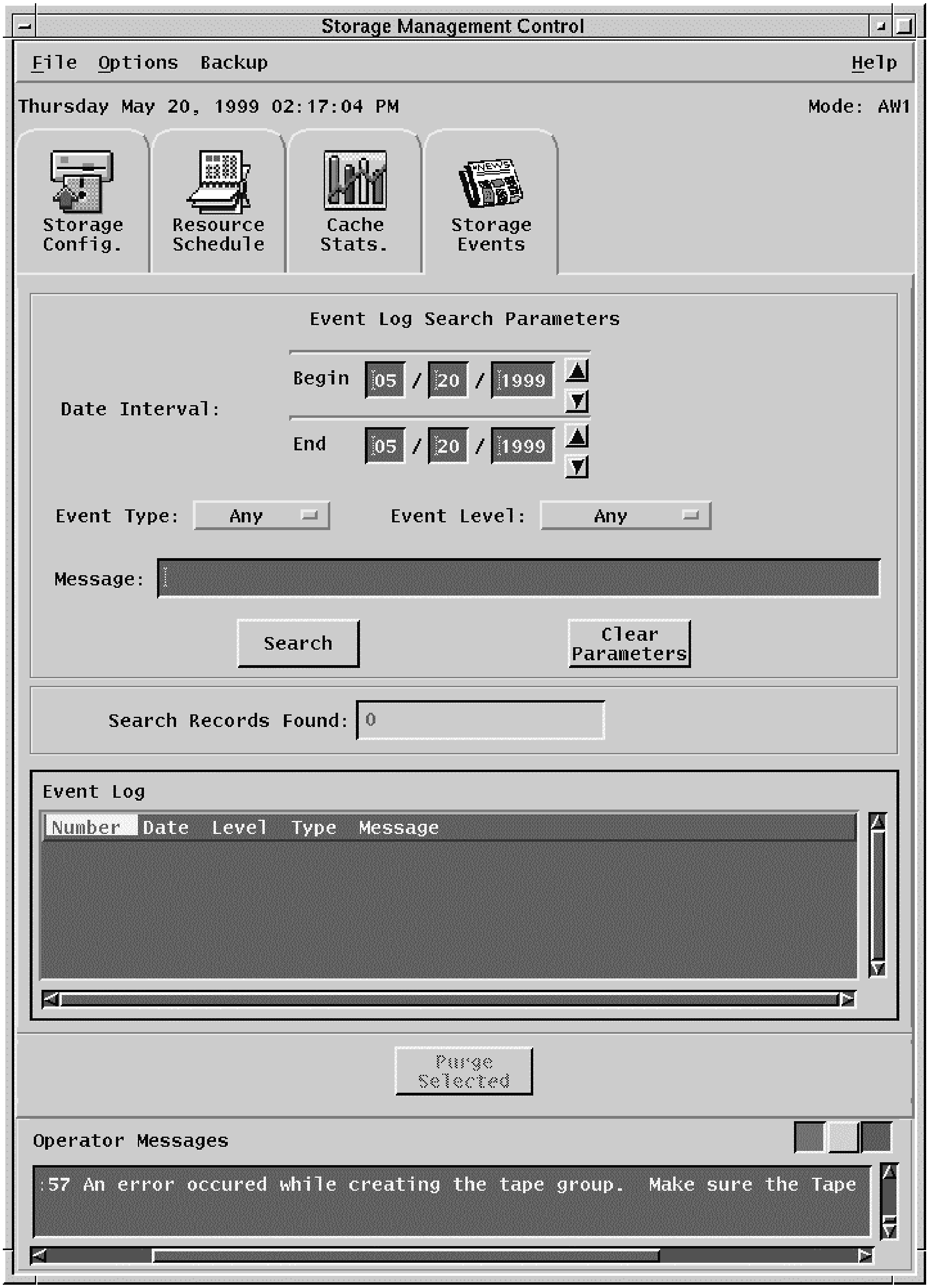
Table 4.10.2-23 provides the detailed descriptions of the fields shown in the Cache Monitoring Tab Storage Management Control window.

Table 4.10.2-23. Cache Monitoring Tab Field Descriptions

Field Name	Data Type	Size	Entry	Description
Cache	Character	N/A	System generated	Cache Manager Server Names.
Current Utilization	Float	N/A	System generated	Percent of cache space that is full.
Used Space	Integer	N/A	System generated	Amount of space in cache that is being used.
Free Space	Integer	N/A	System generated	Amount of space in cache that is free.
Total Space	Integer	N/A	System generated	The total space in the cache.
Number of Resident Files	Integer	N/A	System generated	The number of files in the cache.
Maximum File Size	Integer	N/A	System generated	The size of the largest file in the cache.
Minimum File Size	Integer	N/A	System generated	The size of the smallest file in the cache.
Average File Size	Integer	N/A	System generated	The average size of the files in the cache.
Cache Information	--	--	--	Information about files kept in the Cache Server.
Filename	Character	N/A	System generated	File name, which is cached.
File Size	Integer	N/A	System generated	Size of cached file.
Last Accessed	Date/time	N/A	System generated	Latest date and time in which cached file has been accessed.
Delete Flag	Character	N/A	System generated	Flag indicating if cached file has been deleted (Y/N).
State	Character	N/A	System generated	State of the cached file (Present/standby).
Operator Messages	Character	N/A	System generated	Location where informational, warning or error messages are displayed.

4.10.2.2.5 Storage Events Tab

This tab, shown in Figure 4.10.2-24, allows the operator to search for events in the Event Log. Various search parameters are shown in the Event Log Search Parameter box. When the **Search** button is selected, the results are shown in the Event log box.



Thursday May 20, 1999 02:17:04 PM Mode: AW1

Date Interval: Begin 05 / 20 / 1999 End 05 / 20 / 1999

Event Type: Any Event Level: Any

Message:

Search Records Found: 0

:57 An error occured while creating the tape group. Make sure the Tape

Figure 4.10.2-24. Storage Events Tab

The **Clear Parameters** button deletes entries made in the Event Log Search Parameters data fields. The **Purge Selected** button, when selected, deletes the entries in the Event log, which are highlighted ("Selected") by the operator. A context sensitive **Help** button provides the operator with information on the listed events,

Table 4.10.2-24 provides the detailed descriptions of the Event Log fields.

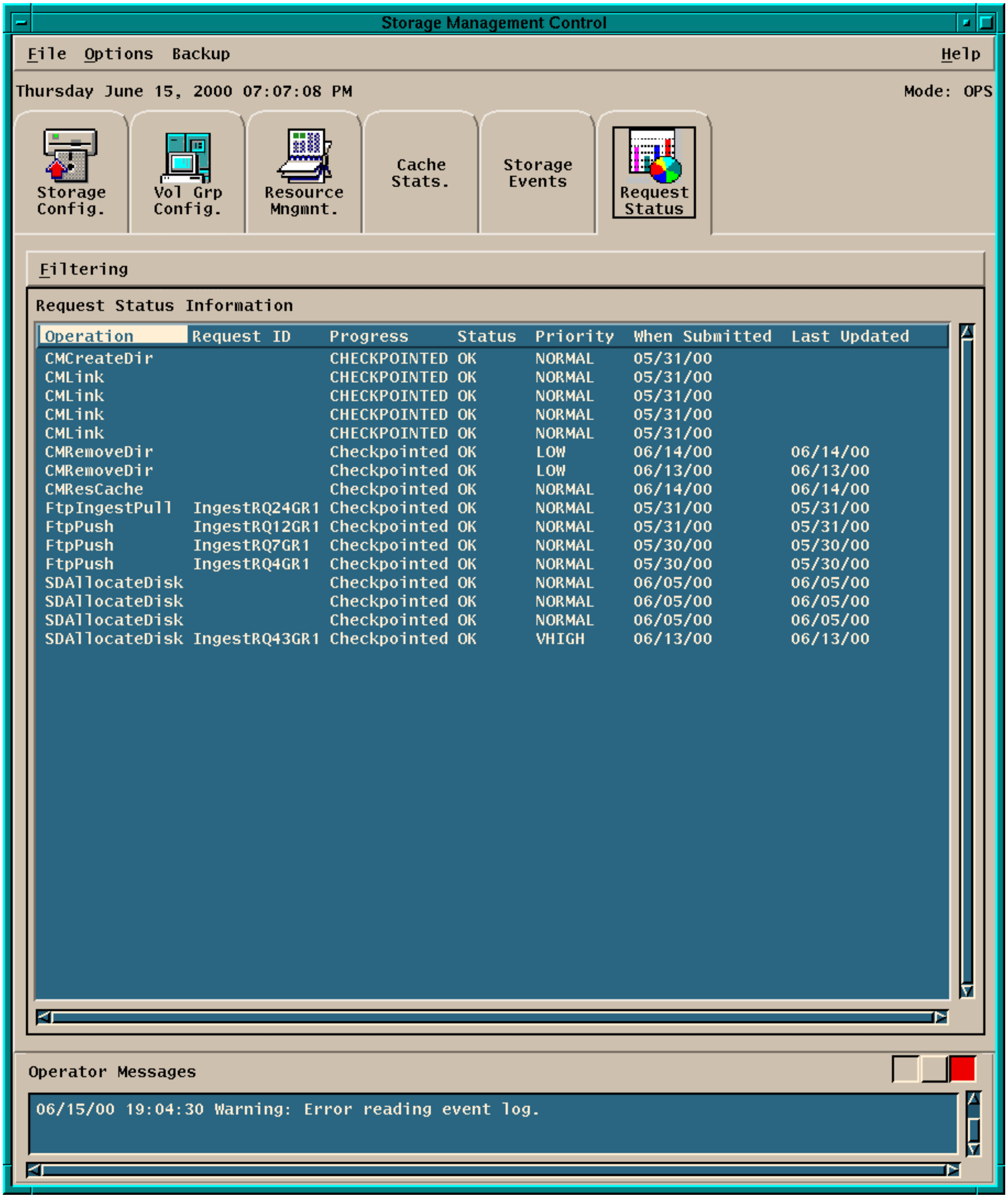
Table 4.10.2-24. Event Log Field Descriptions

Field Name	Data Type	Size	Entry	Description
Date	Date/time	21	System generated	Date and time event was entered into the event log.
Level	Character	11	System generated	Classification of event into various defined (TBS) levels.
Type	Character	10	System generated	Classification of event into various defined (TBS) types.
Message	Character	255	System generated	Message as entered in the Event Log.

Note: the same fields are reported in the "Operator Messages" box in Figure 4.10.2-23. The data type, size, and the description are the same while the entry is "optional" based on the search criteria that the operator uses.

4.10.2.2.6 Server Monitoring (Request Status) Tab

This tab, shown in Figure 4.10.2-25, allows the operator to monitor processing activity in all of the Storage Management servers for a given mode. The main table lists the requests, which are currently being serviced by Storage Management servers, and those, which completed in the last 24 hours. Four filters are provided via the pull-down menu to control how much information is displayed, so that the operator can focus in on particular areas.



Thursday June 15, 2000 07:07:08 PM

Mode: OPS

Request Status Information

Operation	Request ID	Progress	Status	Priority	When Submitted	Last Updated
CMCreateDir		CHECKPOINTED	OK	NORMAL	05/31/00	
CMLink		CHECKPOINTED	OK	NORMAL	05/31/00	
CMLink		CHECKPOINTED	OK	NORMAL	05/31/00	
CMLink		CHECKPOINTED	OK	NORMAL	05/31/00	
CMLink		CHECKPOINTED	OK	NORMAL	05/31/00	
CMRemoveDir		Checkpointed	OK	LOW	06/14/00	06/14/00
CMRemoveDir		Checkpointed	OK	LOW	06/13/00	06/13/00
CMResCache		Checkpointed	OK	NORMAL	06/14/00	06/14/00
FtpIngestPull	IngestRQ24GR1	Checkpointed	OK	NORMAL	05/31/00	05/31/00
FtpPush	IngestRQ12GR1	Checkpointed	OK	NORMAL	05/31/00	05/31/00
FtpPush	IngestRQ7GR1	Checkpointed	OK	NORMAL	05/30/00	05/30/00
FtpPush	IngestRQ4GR1	Checkpointed	OK	NORMAL	05/30/00	05/30/00
SDAllocateDisk		Checkpointed	OK	NORMAL	06/05/00	06/05/00
SDAllocateDisk		Checkpointed	OK	NORMAL	06/05/00	06/05/00
SDAllocateDisk		Checkpointed	OK	NORMAL	06/05/00	06/05/00
SDAllocateDisk	IngestRQ43GR1	Checkpointed	OK	VHIGH	06/13/00	06/13/00

Operator Messages

```
06/15/00 19:04:30 Warning: Error reading event log.
```

Figure 4.10.2-25. Server Monitoring (Request Status) Tab

The filtering menu provides four filtering options:

- **Server** The Server filter controls what activity is displayed by limiting the list to the requests being/having been serviced by a specific server. Selecting "All" displays all requests throughout the Storage Management CI
- **Operation** The Operation filter allows the operator to focus on a specific type of operation. The list of operations is dynamically generated to reflect those operations for which requests are currently in queue
- **Processing State** The Processing State filter allows the operator to differentiate between requests which are being actively processed; which have been completed, either to successful completion or a retryable error state; or which are suspended, awaiting the outcome of another event
- **Submitter** The Submitter filter allows the operator to see the status of requests submitted by a specific client process. The list of possible clients is dynamically generated to reflect the list of clients with outstanding requests

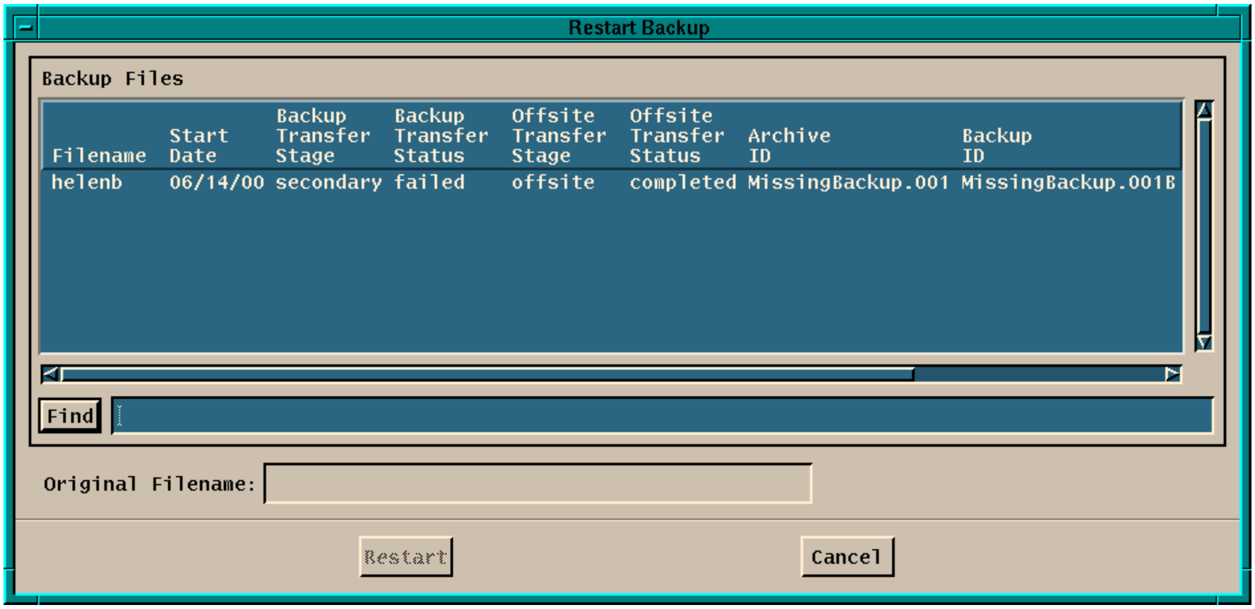
The main area of the Server Activity screen provides a tabular listing of the requests in the system, as constrained by the various pull-down filters. The columns shown are described in Table 4.10.2-25. Clicking on any of the column headers sorts the listed requests in order by the column selected. For example, clicking on the Last Updated column header lists the requests in order from the least recently updated to the most recently updated.

Table 4.10.2-25. Server Monitoring Tab Column Description

Column Heading	Description
Operation	The type of operation represented by the request. For example, an ArStore operation refers to a Store operation being serviced by an Archive Server.
Request ID	The identifier by which a request can be recognized by operations staff. Right clicking on a request ID displays the full RPC ID associated with the request.
Progress	The stage of processing which the request is currently working. For operations, which provide incremental progress (e.g., file copies), this can include a numeric progress indication (e.g., 100 of 750 KB).
Status	The status of the request. OK indicates a request which has completed successfully.
Priority	The priority of the request. Requests can have any of the following priorities: LOW, MEDIUM, HIGH, VHIGH, and XPRESS.
When Submitted	The time and date the Storage Management server received the request, which is responsible for the request.
Last Updated	The time and date when the status was last updated for the request.

4.10.2.2.7 Storage Management Control Menu Screens Available

The **Restart Backup** pop-up window, shown in Figure 4.10.2-26, appears by selecting the **Restart** option on the **Backup** menu. This pop-up allows for restarting a backup.



Filename	Start Date	Backup Transfer Stage	Backup Transfer Status	Offsite Transfer Stage	Offsite Transfer Status	Archive ID	Backup ID
helenb	06/14/00	secondary	failed	offsite	completed	MissingBackup.001	MissingBackup.001B

Original Filename:

Figure 4.10.2-26. Restart Backup Pop-up Window

Table 4.10.2-26 provides the detailed descriptions for the Restart Backup window fields.

Table 4.10.2-26. Restart Backup Pop-up Window Field Descriptions

Field Name	Data Type	Size	Entry	Description
Filename	Character	100	System generated	File name, which uniquely identifies file.
Start Date	Date/time	21	System generated	Date and time at the start of the file. GMT in the format: mm/dd/YY hh:mm:ss.sss
Backup Transfer Stage	Character	9	System generated	Stage of file transfer with respect to the backup volume group.
Backup Transfer Status	Character	9	System generated	Status of file transfer with respect to the backup volume group.
Offsite Transfer Stage	Character	9	System generated	Stage of file transfer with respect to the offsite volume group.
Offsite Transfer Status	Character	9	System generated	Status of file transfer with respect to the offsite volume group.
Archive ID	Character	30	System generated	Identification of data in Archive files.
Backup ID	Character	30	System generated	Identification of data in Backup files.
Find	Character	255	Optional	Allows the operator to perform a keyword search for items in the Device Name field

The screen, shown in Figure 4.10.2-27, is displayed when the **Restart** button is pressed from the Restart Backup window.

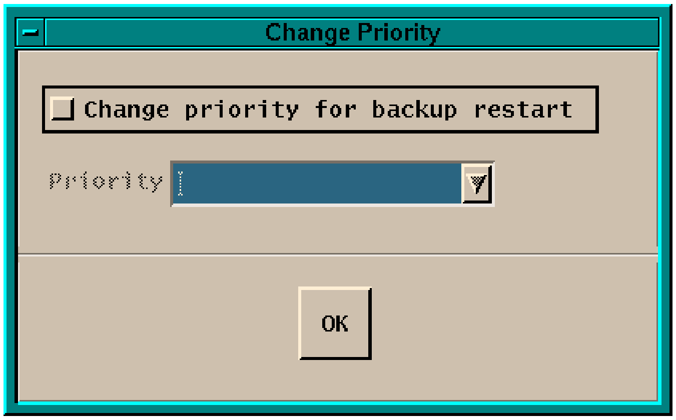


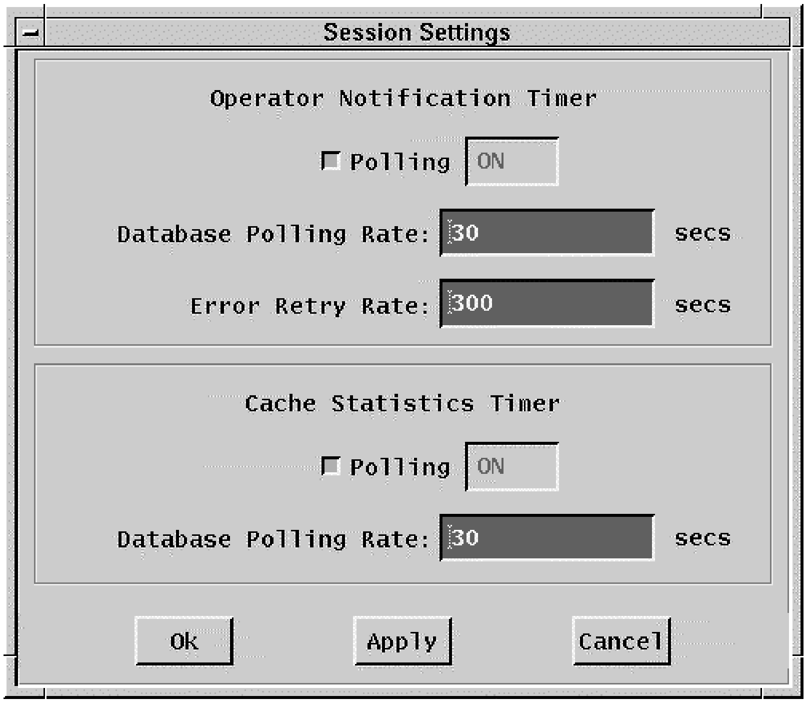
Figure 4.10.2-27. Change Priority Pop-up Window

Table 4.10.2-27 describes the Change Priority window fields.

Table 4.10.2-27. Change Priority Pop-up window Field Descriptions

Field Name	Data Type	Size	Entry	Description
Change priority for backup restart	Toggle button	N/A	Optional	Allows the operator to change the priority before restarting backup.
Priority	Character	6	Optional	Backup can have any of the following priorities: LOW, MEDIUM, HIGH, VHIGH and XPRESS.

Selecting the **System Settings** menu function from the **Options** menu shows the pop up window allowing the operator to select the polling rates for various GUI displays – see Figure 4.10.2-28 (Polling Rate Selection).



Session Settings

Operator Notification Timer

□ Polling ON

Database Polling Rate: 30 secs

Error Retry Rate: 300 secs

Cache Statistics Timer

□ Polling ON

Database Polling Rate: 30 secs

__Figure 4.10.2-28. Polling Rate Selection Pop-up Window__

Table 4.10.2-28 provides the descriptions of the Polling Rate Selection Pop-up window fields.

__Table 4.10.2-28. Polling Rate Selection Pop-up Window Field Descriptions__

Field Name	Data Type	Size	Entry	Description
Polling	Character	3	System provided	The current status of polling.
Database Polling Rate	Integer	Unlimited	Optional	Rate at which the event log is updated.
Error Retry Rate	Integer	Unlimited	Optional	Rate at which an update of the event log is attempted after an error condition is detected.
Database Polling Rate	Integer	Unlimited	Optional	Rate at which the cache statistics are updated.

The **Ok** button implements the new selections and closes the pop-up window.

The **Apply** button applies the new selections entered by the user to the window.

The **Cancel** button ignores the changes and closes the window.

4.10.2.3 Required Operating Environment

For information on the operating environment, tunable parameters, and environment variables of the Storage Management Control Tool refer to the 920-TDA-022 “Custom Code Configuration Parameters” documentation series.

Table 4.10.2-29 identifies the supporting products this tool depends upon to function properly.

Table 4.10.2-29. Support Products for Storage Management Control

Product Dependence	Protocol Used	Comments
Sybase	SQL	Checkpoint, configuration and request management for the server
Clients/GUIs	Socket	To transfer data and information

4.10.2.4 Databases

The Storage Management Tool uses data that is provided by the Storage Management Database. For details about the Storage Management Database, please refer to DID 311-CD-625, *Storage Management Database Design and Schema Specifications*.

4.10.2.5 Special Constraints

AMASS has to be up in order for the Storage management Tool to archive and retrieve files. Moreover, the FTP server on the ACP host has to have debug logging enabled to write filenames of the pulled files to syslog for pull notification to the pull monitor.

4.10.2.6 Outputs

None

4.10.2.7 Event and Error Messages

See Appendix A, for event and error messages.

4.10.2.8 Reports

None

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4.10.3 Data Distribution Requests GUI

The Data Distribution software is capable of delivering ordered ECS product data electronically using FTP push/pull. With the introduction of the Product Distribution System (PDS) software in ECS Release 6A, the Data Distribution software is configured to handle only electronic FTP delivery requests. All hard media delivery requests are handled by PDS, which is described in Section 4.10.5.

The Data Distribution Requests GUI displays detailed information on individual data distribution requests and provides the capability to filter requests, change the priority of requests, and mark requests as shipped. The GUI's main window provides operations personnel at the DAACs the capability for managing data distribution requests. A summary of the functions performed by the Data Distribution Requests GUI is given in Table 4.10.3-1.

Table 4.10.3-1. Common ECS Operator Functions Performed with the Data Distribution GUI

Operating Function	Tab	Description	When and Why to Use
Manage Data Distribution Request Activities	Distribution Requests Tab	Allows the operators to view and track data distribution requests	As required to monitor detailed information on data distribution request activities, change priority of requests, and mark requests as shipped, suspend/resume selected requests, suspend/resume all requests, and filter requests.

4.10.3.1 Quick Start Using Data Distribution

To start the Data Distribution Requests GUI, enter the following command line:

>**EcDsDdistGuiStart <mode>** where:

<**mode**> is the ECS mode for the execution (e.g., **OPS**, **TS1 or TS2)**.

4.10.3.2 Data Distribution Main Screen

The Data Distribution Requests GUI Main Screen has five tabs:

- The **Data Distribution (Distrib'n) Requests** tab provides the functionality needed to track the activity related to product distribution requests
- The **System Requests** tab has not yet been defined as of ECS Release 6B delivery. Request level information and action for requests not in the DDIST CSCI in the DSS can now be obtained from or performed through the Synergy Order Manager
- The **Tape Ids** tab allows hard media such as tapes and CD ROMs to be searched from the Distribution list based on the ID or Distribution Request Number
- The **Preamble Editor** tab allows the email and packing list headers to be edited
- The **Event Logging** tab has not yet been defined as of ECS Release 6B delivery

The following sub-sections describe the use of these tabs.

4.10.3.2.1 The Data Distribution Requests Tab

The Data Distribution Requests Tab, shown in Figures 4.10.3-1, is the default tab appearing when the Data Distribution Requests GUI is invoked.

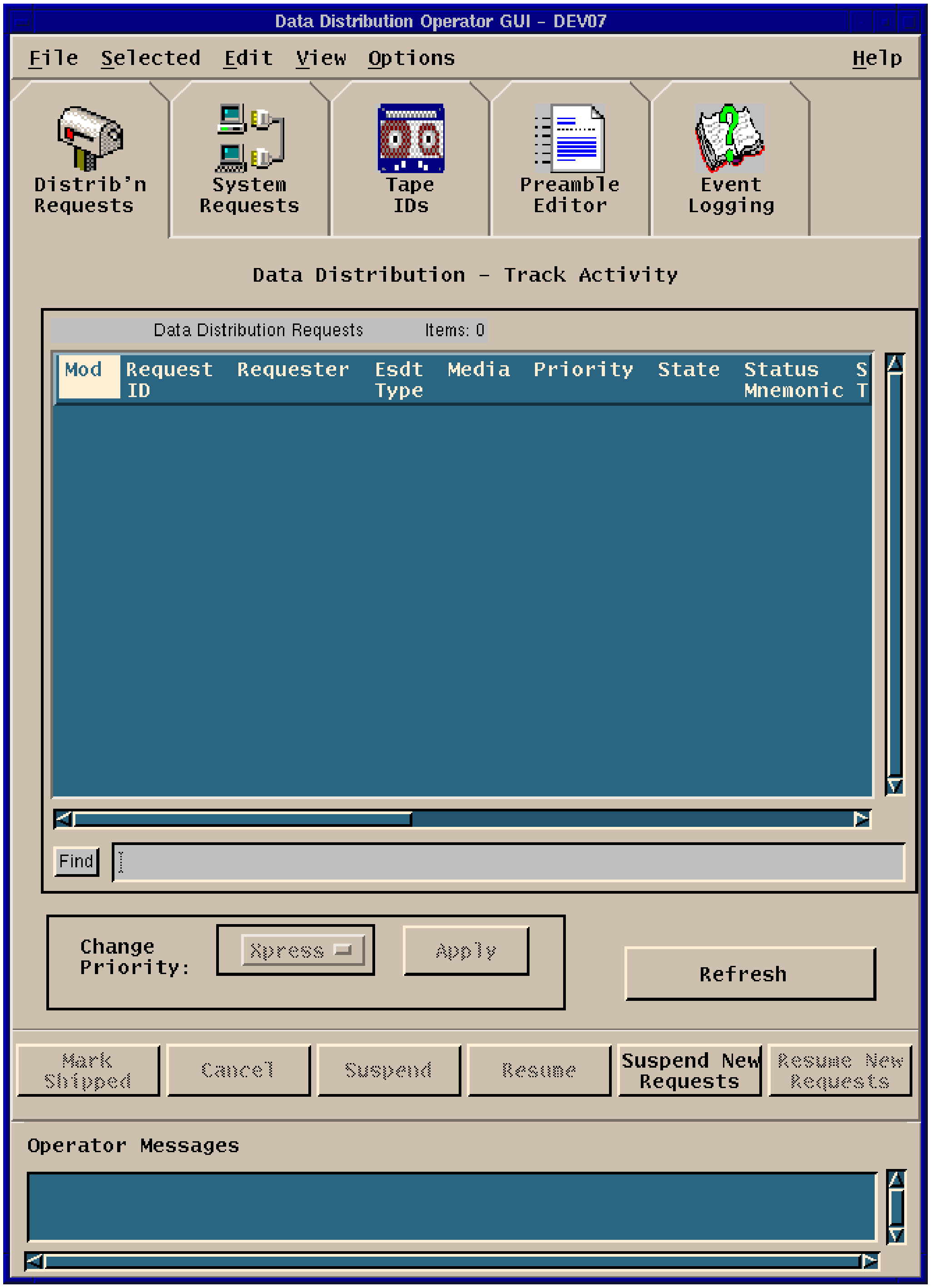


Figure 4.10.3-1. Data Distribution Main Screen showing Data Distribution Request Tab (1 of 2)

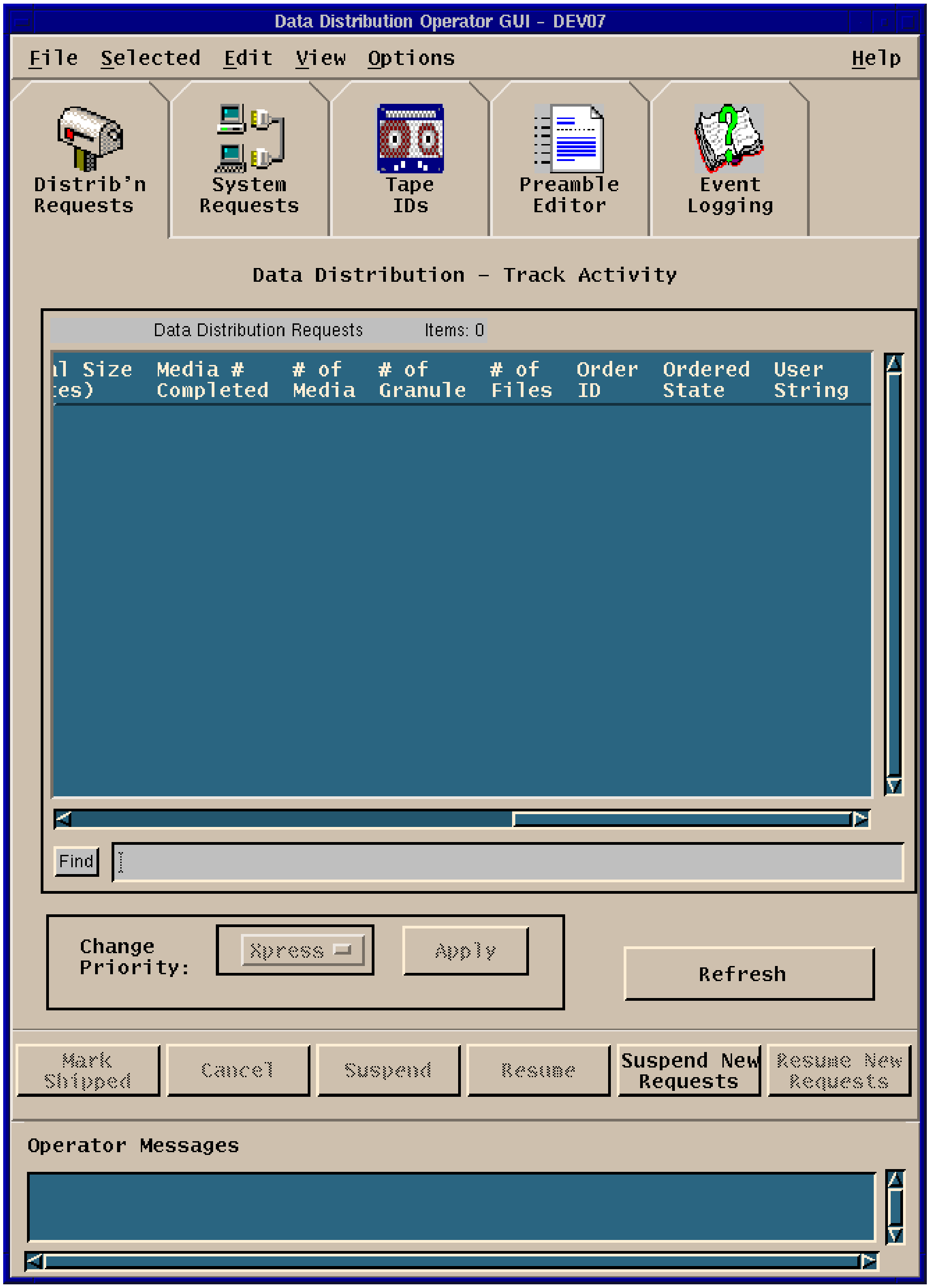


Figure 4.10.3-1. Data Distribution Main Screen showing Data Distribution Request Tab (2 of 2)

The Data Distribution Request tab displays data distribution requests. The major component is the Track Activity panel, which lists the data distribution requests currently being handled by the Data Distribution server. The total number of requests is displayed at the top of the panel in the "items" field. Several parameters associated with each individual request are displayed. The list can be sorted by column. All of the parameters included for each request are identified and described in Table 4.10.3-2.

Table 4.10.3-2. Data Distribution - Track Activity Panel Field Description (1 of 2)

Field Name	Data Type	Size	Entry	Description
MOD	Boolean	1	System generated	Checkmark that shows which requests have been selected and/or modified by the operator during the current session.
Request ID	Character	Unlimited	System generated	Unique identifier for the request.
Requester	Character	Unlimited	System generated	Identifies the user that submitted the request.
Media	Character	Unlimited	System generated	Type of media to be used for distribution. Values are read from the Registry.
Priority	Character	Unlimited	System generated	Priority at which the distribution request is processed relative to other distribution requests, Normal is its default value. Other Values are: Xpress, Vhigh, High and Low.
State	Character	Unlimited	System generated	Request states are: pending, active, staging, waiting for shipment, shipped, canceled, transferring, suspended, suspended with errors.
Status Mnemonic	Character	Unlimited	System generated	Displays a small message that indicates there is an operator message attached to the request.
Submission Time	Date/time	19	System generated	Time when the submit service was invoked upon the request. The time is standard GMT. The format used is: mm/dd/yyyy hh:mm:ss.
End Time	Date/time	19	System generated	Time when the distribution request has been satisfied. Time is in standard GMT, the format is mm/dd/yyyy hh:mm:ss.
Estimated Size (bytes)	Integer	Unlimited	System generated	Estimated total packaging size in bytes of the data to be distributed in the request. This is not the sum of the file sizes, but the estimated space all the files would take up on the distribution media considering the media block size. It is equal to or slightly larger than the sum of the file sizes
Estimated # of Media	Integer	Unlimited	System generated	Estimated number of media needed to fulfill a media distribution request.
Total Size (bytes)	Integer	Unlimited	System generated	Total size in bytes of the data to be distributed in the request.

Table 4.10.3-2. Data Distribution - Track Activity Panel Field Description (2 of 2)

Field Name	Data Type	Size	Entry	Description
Media # Completed	Integer	Unlimited	System generated	Number of media that have been already filled up by the distribution request that is being processed.
# Media	Integer	Max # of Media configurable	System generated	Number of Media that need to be used to completely fulfill a (media) distribution request if it were not to be compressed.
# Granules	Integer	Unlimited	System generated	Number of granules comprising the distribution request.
# of Files	Integer	Unlimited	System generated	Number of files in the distribution request.
Order ID	Character	Unlimited	System generated	The unique order ID that the entire data server uses for identifying the distribution request.
Ordered State	Character	20	System generated	Request State can be changed directly by the operator by means of the button provided on the Track Activity screen (see below). See "State" field for values.
User String	Character	255	System generated	Contains original user request ID. Used to correlate a DN with original request.

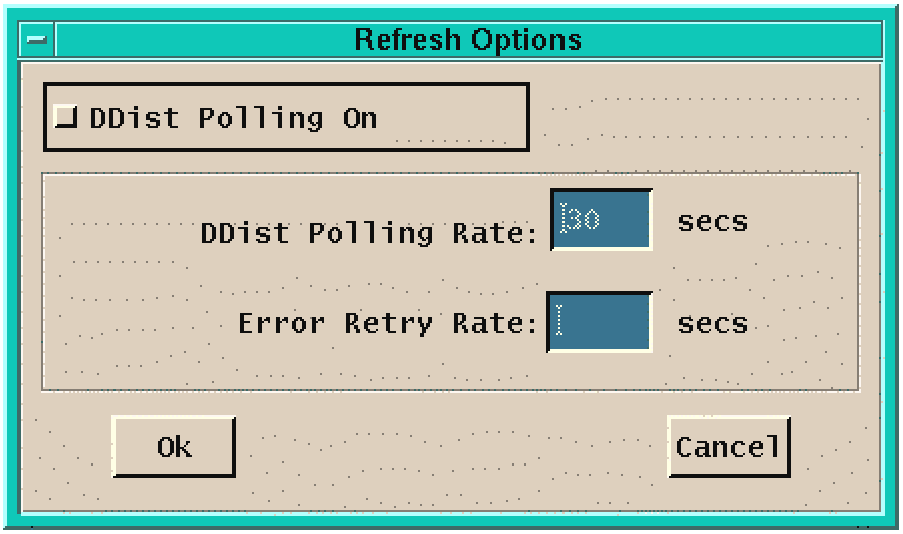
The operator can select from the menu bar items at the top of the Data Distribution GUI window for getting help and activating less-frequently used secondary functions. The menu bar capability is available on all Data Server GUI screens. The following menus are available:

- **File** includes the following items:
  - **View** opens a text viewer window
  - **Open Terminal** opens an Xterm window
  - **Save As…** saves the current contents of the Data Distribution Requests table, Tape Request and Tape ID tables, or the Preamble Text editor to a text file
  - **Print** sends the current contents of the Data Distribution Requests table, Tape Request and Tape ID tables, or the Preamble Text editor to the default printer
  - **Exit** (Ctrl-Q) exits the application (graceful exit)
- **Selected** opens a menu comprising the following items:
  - **Select All** selects all the requests on the main screen
  - **Deselect All** unselects all the requests on the main screen
- **Edit** that includes the following items:
  - **Cut** removes the selected text from the Preamble Text editor and puts in the X Windows clipboard

  - **Copy** places a copy of the selected text from the Preamble Text editor into the X Windows clipboard
  - **Paste** inserts the text on the X Windows clipboard into the selected area of the Preamble Text editor
- **View** includes the following items:
  - **Refresh** redraws the window
  - **Filter** opens the Filter Control window
  - **Detailed** sends the detailed information of the selected distribution request to the operator messages text field
- **Options** includes the following items:
  - **System Settings** opens the Refresh Options window where the operator is given the option to toggle the **DDist base polling** ***On*** and ***Off*** through the provided toggle button (see Figure 4.10.3-2). In case the operator decided to have the polling of the Data Distribution Database ***On***, the polling rate can be edited. Details on the parameters that can be input by the operator in the Refresh Options screen are provided in Table 4.10.3-3.
  - **Verify Connection** checks the connections to the distribution server, and sends the connection status to the operator message text field
  - **Reconnect** attempts to reestablish communications to the Distribution server
- **Help** provides on-line help to the operator.

Table 4.10.3-3. Refresh Options Field Description

Field Name	Data Type	Size	Entry	Description
DDist Polling Rate	Integer	0-9999	Optional	Allows the operator to specify the polling rate in seconds for updating the Task Activity Window (default is 30 seconds).
Error Retry Rate	Integer	0-9999	Optional	Time in seconds the system is going to wait before trying to poll the Data Server, after a failed attempt.



□ DDist Polling On

DDist Polling Rate: 30 secs

Error Retry Rate: secs

__Figure 4.10.3-2. Refresh Options Window__

The Data Distribution Tab includes additional functionality associated with the following buttons:

- **Apply** allows the operator to change the priority of the distribution requests selected in the Track Activity panel.   Available selections are Xpress, Vhigh, High, Normal (default), and Low. The priority selection is handled through a pull down menu

- **Mark Shipped** allows the operator to change the state of the selected Hard Media distribution request from waiting for shipment to shipped when the request has actually been shipped

- **Filter (from the Options menu)** brings up the Filter Request Dialog (see Figure 4.10.3-3), which provides a selection of attributes from the list of distribution requests on which to filter. Filter on **Request ID** and **Requester** is done by selecting the corresponding toggle button and entering the desired information. Selecting the **All Requests** radio button returns to the original state of the request list. Further request filtering is allowed by selecting one or more media type list entries. The operator filters on all Media types by clicking the **All** button or clears all selected filters by clicking on the **None** button. . Options for the Media Type are determined by entries within the Registry.

  Filtering is also allowed based on possible states of the request by selection through the available radio buttons in the **State:** panel. By clicking on **All,** the operator can filter on all possible states. All selected filters can be cleared by clicking on the **None** button. Selectable states include: Pending, Active, Staging, Transferring, Cancelled, Suspended, Suspended with Errors, Waiting for Shipment, and Shipped.

  In addition, the following pushbuttons are available:

- **OK** applies all selected filters and closes the filter dialog
- **Apply** implements all filters and keeps the filter dialog open (in case other filtering needs to be done.)
- **Cancel** closes the filter dialog without applying the selected filters
- **Help** displays on-line help information

Table 4.10.3-4 describes the Data Distribution - Filter Requests Dialog.

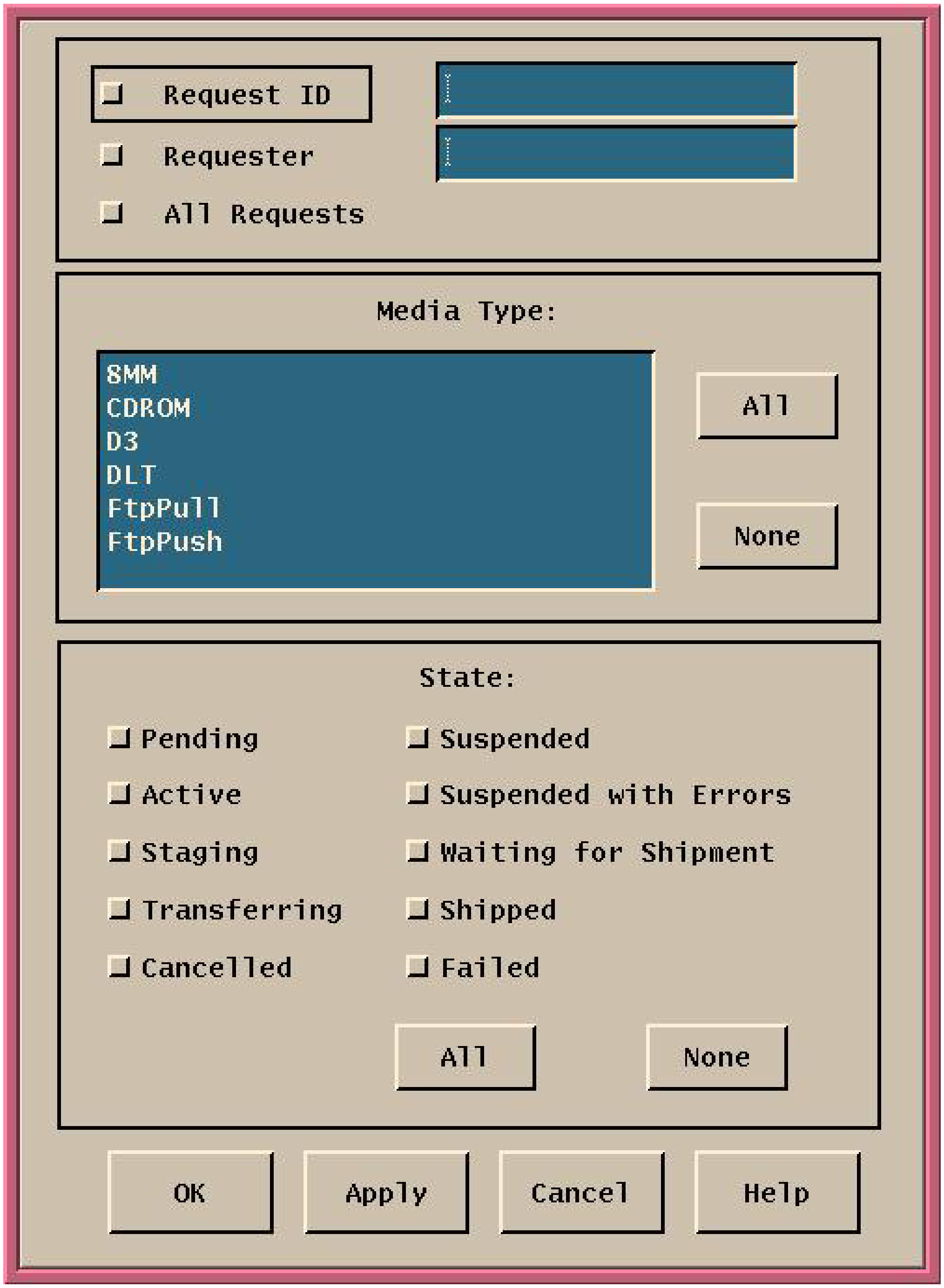


Figure 4.10.3-3. Data Distribution - Filter Requests Dialog

Table 4.10.3-4. Data Distribution - Filter Requests Field Description

Field Name	Data Type	Size	Entry	Description
Request ID	Character	Unlimited	Operator Selected	Unique identifier for the request.
Requester	Variable character	Unlimited	Operator Selected	Identifies user that submitted the request.
All Requests	Boolean	1	Operator Selected	When toggled ON, all requests are displayed.
Media Type	Character	Unlimited	Operator Selected	Request(s) with media attribute among the selected types are added to filtered list.
State	Boolean	1	Operator Selected	Request(s) with State attribute within the toggled ON states are added to the filtered list.

Back to the Data Distribution Tab, the following additional buttons are also available:

- **Refresh** updates the Data Distribution Request screen with the most recent list of requests
- **Cancel**, **Suspend** and **Resume** allow the operator to, respectively, cancel, suspend or resume the requests selected in the Track Activity list
- Finally the **Suspend New Requests** and **Resume New Requests** buttons suspend all and resume all requests currently present in the Data Distribution server
- **Operator Messages**: any error encountered during an operation to a request in the list is displayed in the operator messages window at the bottom of the screen

4.10.3.2.2 System Requests Tab

The functionality associated with the System Requests tab shown in Figure 4.10.3-4 is not yet defined, as of ECS Release 6B delivery. However, request level information and action for requests not in the DDIST CSCI in the DSS can now be obtained from or performed through the Synergy Order Manager. See Sections 4.11.15 and 4.11.16.

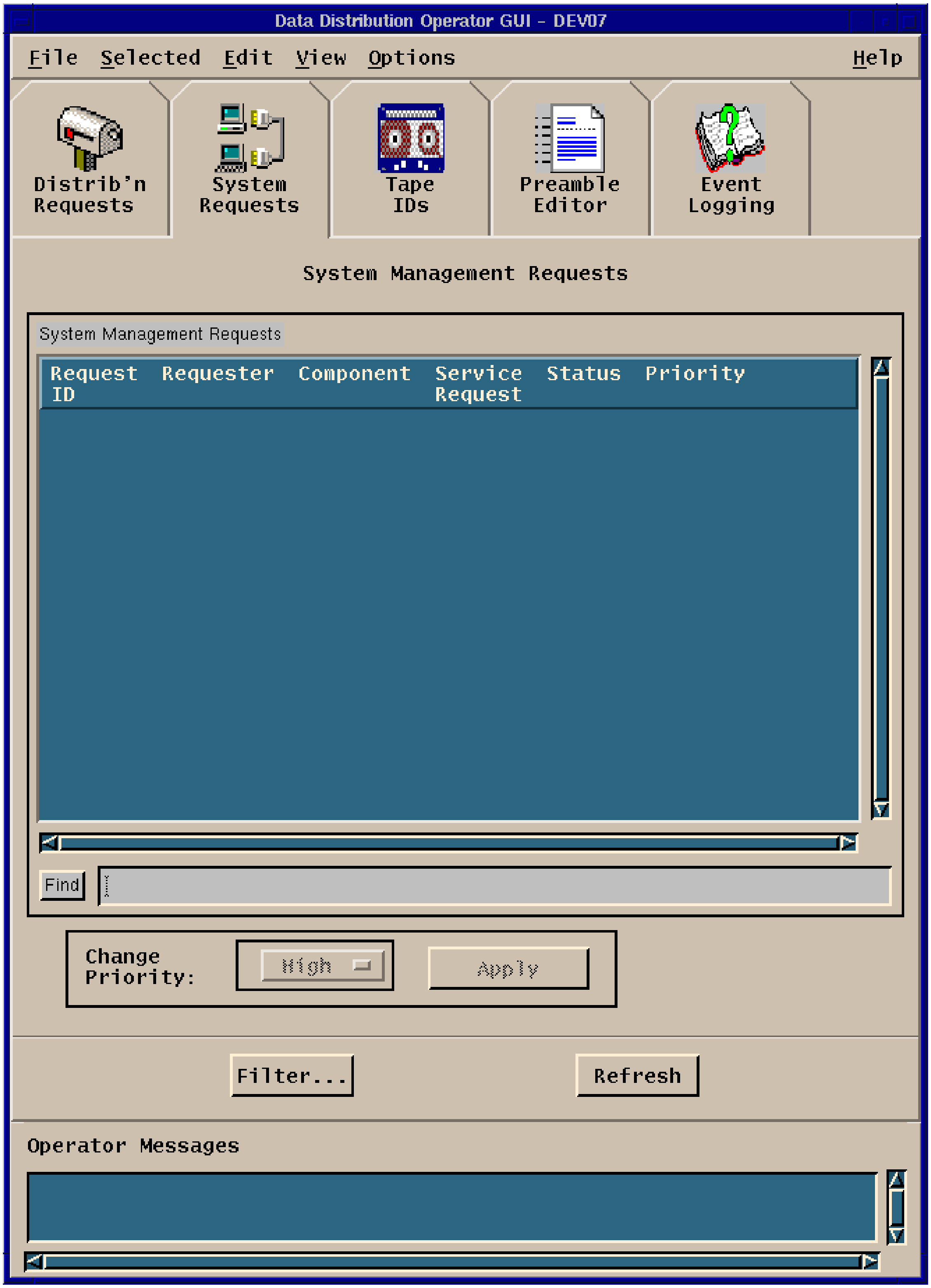
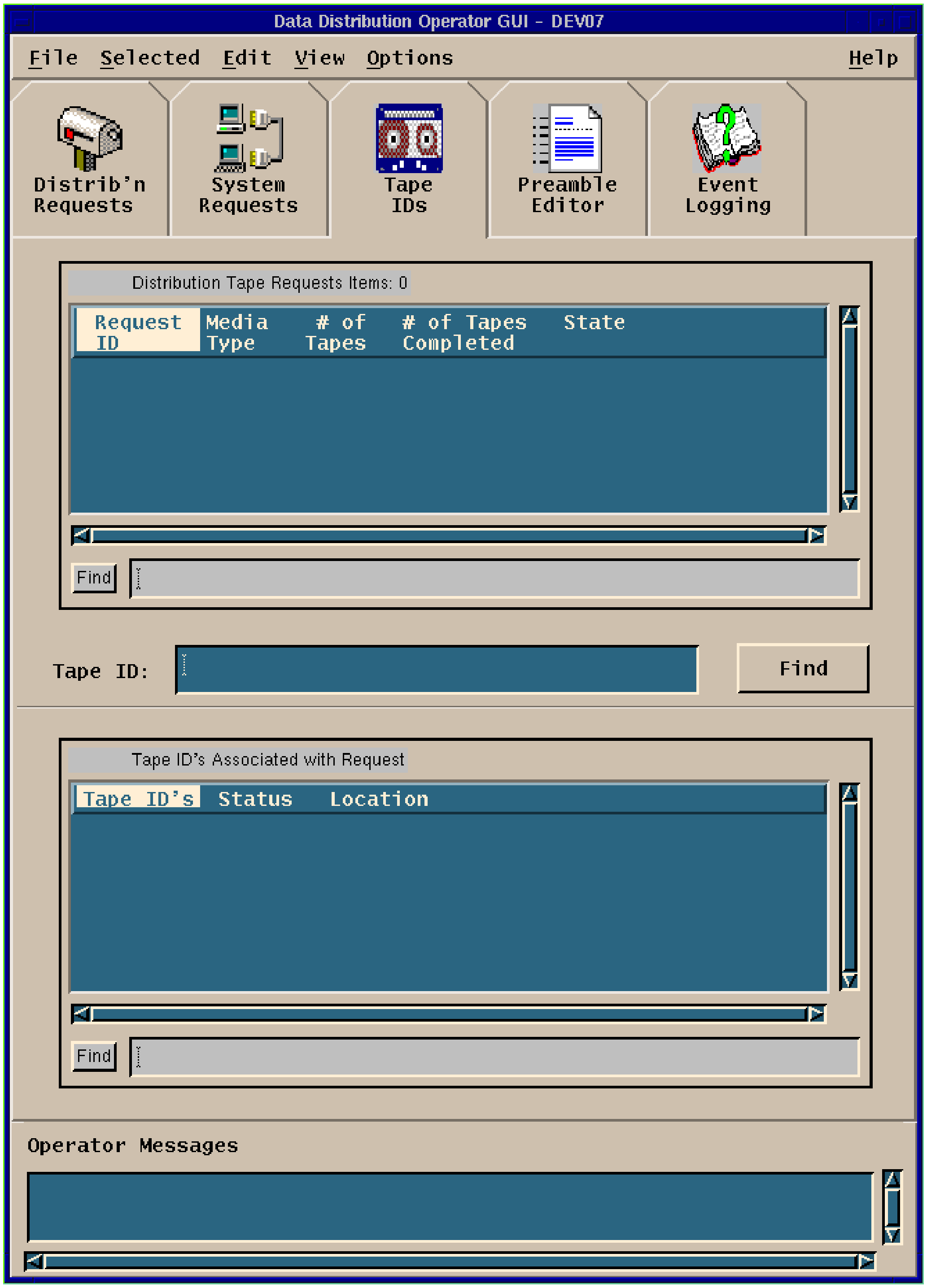


Figure 4.10.3-4. System Requests Tab

4.10.3.2.3 Tape IDs Tab

The purpose of the Tape Id tab shown in Figure 4.10.3-5 is to find and display Distribution Hard Media Request Items and Media IDs associated with these requests.



Distribution Tape Requests Items: 0

Request ID	Media Type	# of Tapes	# of Tapes Completed	State

Tape ID's Associated with Request

Tape ID's	Status	Location

Figure 4.10.3-5. Tape IDs Tab

The tab contains two list panels, one for Distribution Hard Media Requests and the other for Media ID's Associated with Request. The first list displays the total number of media requests at the top of the panel. Several parameters associated with each individual request are displayed to the user through this panel. The list can be sorted by column. All of the parameters included for each request in the Distribution Hard Media Requests panel are listed and described in Table 4.10.3-5.

Table 4.10.3-5. Distribution Hard Media Requests Items Field Description

Field Name	Data Type	Size	Entry	Description
Request ID	Character	Unlimited	System generated	Unique identifier for the request.
Media Type	Character	Unlimited	System generated	Type of tape media to be used for distribution. Values are 8mm, DTF, CD ROM, and DLT.
# Media	Integer	Max # of Media	System generated	Number of Media that need to be used to completely fulfill a media distribution request.
# Media Completed	Integer	Unlimited	System generated	Number of Media that have already been filled up by the distribution request that is being processed
State	Character	Unlimited	System generated	Request states are: pending, active, staging, waiting for shipment, shipped, canceled, transferring, suspended, suspended with errors.

The second list displays the total set of media associated with the request selected in the first list. Several parameters associated with each individual request are displayed to the user through this panel. The list can only be sorted by Tape ID column. All of the parameters included for each request in the Media Ids Associated with Request panel are listed and described in Table 4.10.3-6.

Table 4.10.3-6. Media IDs Field Description

Field Name	Data Type	Size	Entry	Description
Media ID	Character	Unlimited	System generated	Unique identifier for the media.
Status	Character	Unlimited	System generated	Storage Management description of the media status.
Location	Character	Unlimited	System generated	Physical location of the media.

The Media ID's tab includes additional functionality associated with the following button:

- **Find** allows the operator to search the database for a specified Media ID. If found, the media's associated Request ID is displayed in the Distribution Hard Media Requests list, and all of the media associated with the Request are listed in the Media ID list.

4.10.3.2.4 Preamble Editor Tab

The purpose of the Preamble Editor tab as shown in Figure 4.10.3-6 is to provide editing functions for the preamble files for email and packing lists.

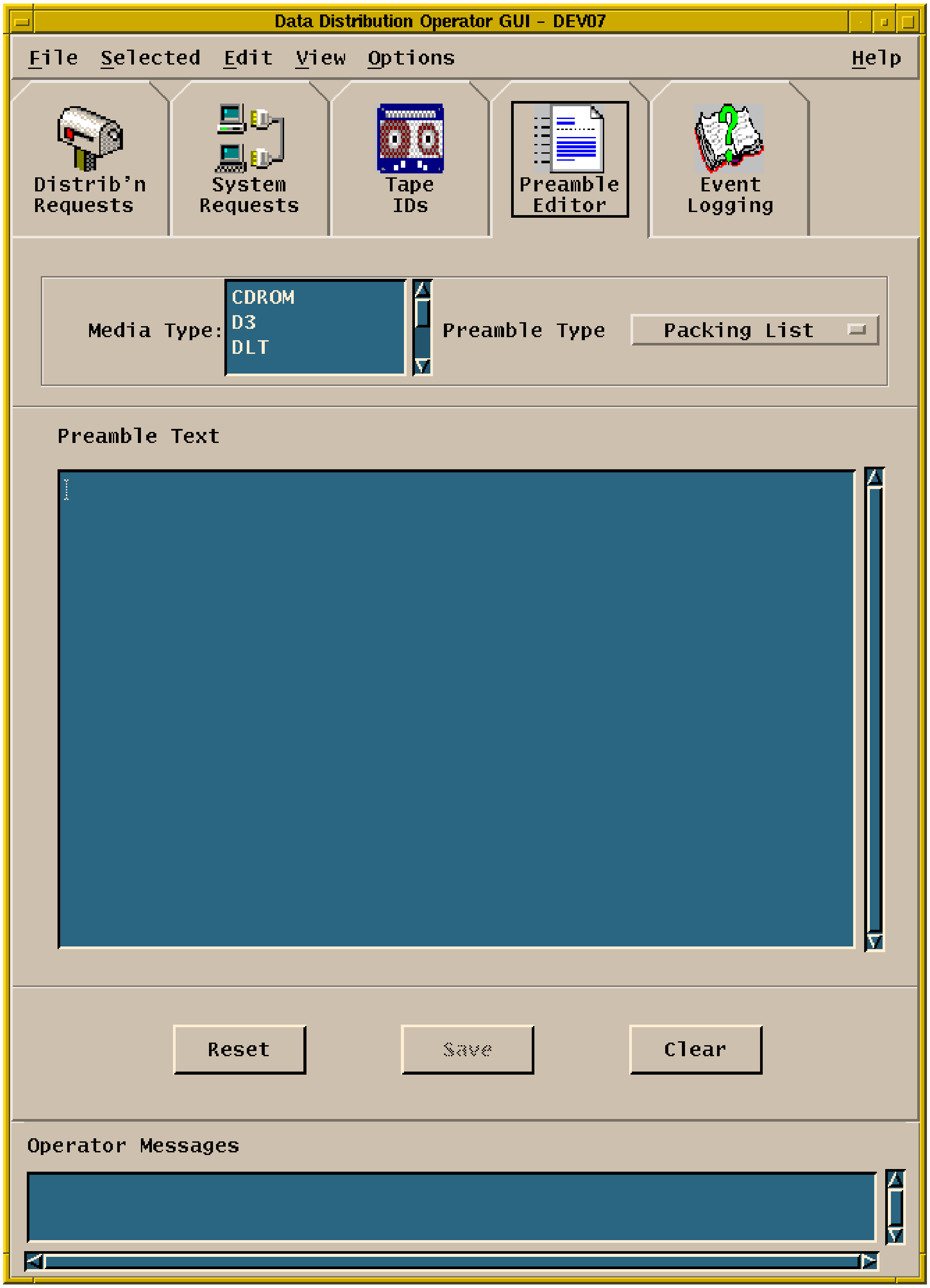


Figure 4.10.3-6. Preamble Editor Tab

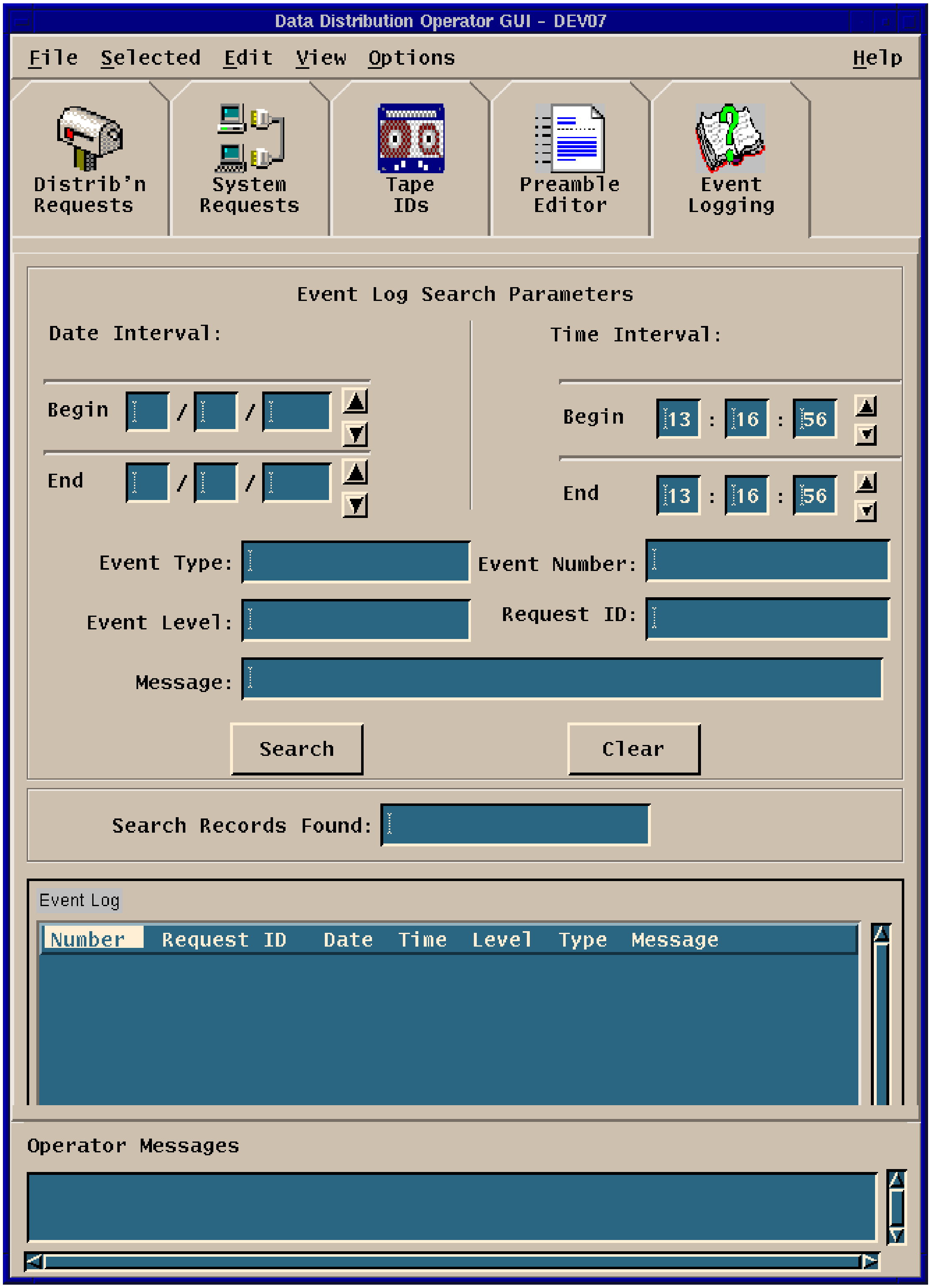
The Preamble Editor tab allows the editing of each media type's Packing list, Successful report, and Failure report Preamble messages. The major component of this tab is the text-editing window, in which the Preamble messages are displayed and changed. Above the text-editing window are two gadgets for selecting the Media Type and Report Type. The Media Type gadget is a scrolled list, which is automatically filled from entries in the registry on which types of media are available. The Report Type gadget is a pull down list with three options: Packing List, Successful Email, and Failed Email. By selecting a value from either one of these gadgets, the corresponding media/report Preamble text is loaded from the appropriate file into the text-editing window.

Below the text-editing window are three buttons: Reset, Save, and Clear. Pressing the Reset button discards any changes made and reloads the current media/report Preamble text from the appropriate file. Pressing the Save button writes the current contents of the text edit window to the appropriate file. Pressing the Clear button removes all text from the text-editing window.

If any changes are made to the text in the text-editing window after loading or saving, the GUI displays a reminder notice to save if the Media Type, Report Type, or tab is changed. Also, the editing functions Cut, Copy, Paste in the Edit menu are enabled within the Preamble Editor tab. These editing functions are also available by right clicking within the text-editing window.

4.10.3.2.5 Event Logging Tab

The functionality associated with the Event Logging tab shown in Figure 4.10.3-7 is not yet defined, as of ECS Release 6B delivery.



Date Interval:

Begin / /

End / /

Time Interval:

Begin 13 : 16 : 56

End 13 : 16 : 56

Event Type:

Event Number:

Event Level:

Request ID:

Message:

Search Records Found:

Figure 4.10.3-7. Event Logging Tab

4.10.3.3 Required Operating Environment

For information on the operating environment, tunable parameters, and environment variables refer to the 920-TDA-022 “Custom Code Configuration Parameters” documentation series.

4.10.3.3.1 Interfaces and Data Types

Table 4.10.3-7 identifies the supporting products this tool depends upon in order to function properly.

Table 4.10.3-7. External Interface Protocols

Product Dependency	Protocol Used	Comments
DDIST and all clients	Socket	via DDIST client libraries

4.10.3.4 Databases

The Data Distribution Requests Tool displays and updates the list of distribution requests after retrieving the information from the EcDsDistributionServer database associated with a mode. Mode refers to the system environment (e.g., OPS TS1 or TS2). Details about the architecture of the EcDsDistributionServer database can be found in the applicable section of DID 311-CD-101, *Data Distribution Database Design and Schema Specifications for the ECS Project.*

4.10.3.5 Special Constraints

The Data reported in the Task Activity window has to be retrieved from the Data Distribution database, as specified in the previous paragraph. The Data Distribution database must then be up and running before invoking the Data Distribution Tool.

4.10.3.6 Outputs

The Data Distribution Tool mainly is used to display data produced by other ECS components and does not generate any specific output.

4.10.3.7 Event and Error Messages

Both event and error messages are listed in Appendix A.

4.10.3.8 Reports

None.

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4.10.4 Granule Deletion Administration Tool

The Granule Deletion Administration Tool provides the ECS Operations Staff with the ability to delete granules using a command line interface. The granules can be deleted from both the inventory and archive or just the archive. Granules are not physically deleted from the Archive. The directory entry is deleted so that the files cannot be accessed. The physical storage occupied by the deleted granules is not reclaimed through this operation.

The deletion process can involve deleting the specified granules along with associated granules, as long as any other granules do not reference the associated granules (e.g., browse, PH, QA). The deletion process can also involve deleting the specified granules even if they are inputs to other granules.

4.10.4.1 Quick Start Using the Granule Delete Administration Tool

Enter the following command to start the Granule Deletion Administration Tool:

>**EcDsGranuleDelete ConfigFile /usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG ecs_mode <MODE> <command line parameters>**

There are various command line parameters and they are used in combination with each other. Table 4.10.4-1 provides a description of the parameters.

Table 4.10.4-1. Command Line Parameters of the Granule Deletion Administration Tool

Parameter Name	Description
name	ESDT Short Name of the granules to delete.
version	ESDT Version ID of the granules to delete.
begindate	Beginning Date of the temporal range of granules to delete.
enddate	Ending Date of the temporal range of granules to delete.
insertbegin	Beginning time when granules to delete were inserted.
insertend	Ending time when granules to delete were inserted.
localgranulefile	Name of file containing ESDT ShortName, Version IDs and Local Granule Ids of the granules to delete.
geoidfile	Name of file containing geoids of the granules to delete.
log	Name of log file to record the deletion operations. This parameter is mandatory.
physical	Delete from inventory and archive.
DFA	Delete from archive only.
noprompt	Do not prompt for confirmation of the delete.
display	Display the candidate granules for deletion, but do not delete.
noassoc	Do not delete associated granules (QA, Browse, PH).
delref	Delete granules that are referenced by other granules.

There are some parameters that are mandatory. The parameter physical, DFA or display must be specified. There are several parameters used to specify the science granules to delete: name, version, begindate and enddate or name, version, insertbegin and insertend or localgranulefile or geoidfile.

4.10.4.2 Granule Deletion Administration Tool Commands

The Granule Deletion Administration Tool provides the following 44 granule deletion options:

1. Confirmed deletion of science and associated granules from the Archive and Inventory. The science granules must meet the ShortName, VersionID and temporal range criteria input by the user.

2. Unconfirmed deletion of science and associated granules from the Archive and Inventory. The science granules must meet the ShortName, VersionID and temporal range criteria input by the user.

3. Confirmed deletion of science granules from the Archive and Inventory. The science granules must meet the ShortName, VersionID and temporal range criteria input by the user.

4. Unconfirmed deletion of science granules from the Archive and Inventory. The science granules must meet the ShortName, VersionID and temporal range criteria input by the user.

5. Confirmed deletion of referenced and un-referenced science granules from the Archive and Inventory. The science granules must meet the ShortName, VersionID, and temporal range criteria input by the user.

6. Unconfirmed deletion of referenced and un-referenced science granules from the Archive and Inventory. The science granules must meet the ShortName, VersionID, and temporal range criteria input by the user.

7. Confirmed deletion of referenced and un-referenced science granules and associated granules from the Archive and Inventory. The science granules must meet the ShortName, VersionID, and temporal range criteria input by the user.

8. Unconfirmed deletion of referenced and un-referenced science granules and associated granules from the Archive and Inventory. The science granules must meet the ShortName, VersionID, and temporal range criteria input by the user.

9. Confirmed deletion of science granules from the Archive. The science granules must meet the ShortName, VersionID and temporal range criteria input by the user.

10. Unconfirmed deletion of science granules from the Archive. The science granules must meet the ShortName, VersionID and temporal range criteria input by the user.

11. Confirmed deletion of science and associated granules from the Archive and Inventory. The science granules must meet the ShortName, VersionID and insert time range input by the user.

12. Unconfirmed deletion of science and associated granules from the Archive and Inventory. The science granules must meet the ShortName, VersionID and insert time range input by the user.

13. Confirmed deletion of science granules from the Archive and Inventory. The science granules must meet the ShortName, VersionID and insert time range input by the user.

14. Confirmed deletion of science granules from the Archive and Inventory. The science granules must meet the ShortName, VersionID and insert time range input by the user.

15. Confirmed deletion of referenced and un-referenced science granules from the Archive and Inventory. The science granules must meet the Shortname, VersionID, and insert time range input by the user.

16. Unconfirmed deletion of referenced and un-referenced science granules from the Archive and Inventory. The science granules must meet the Shortname, VersionID, and insert time range input by the user.

17. Confirmed deletion of referenced and un-referenced science granules and associated granules from the Archive and Inventory. The science granules must meet the Shortname, VersionID, and insert time range input by the user.

18. Unconfirmed deletion of referenced and un-referenced science granules and associated granules from the Archive and Inventory. The science granules must meet the Shortname, VersionID, and insert time range input by the user.

19. Confirmed deletion of science granules from the Archive. The science granules must meet the ShortName, VersionID and insert time range input by the user.

20. Unconfirmed deletion of science granules from the Archive. The science granules must meet the ShortName, VersionID and insert time range input by the user.

21. Confirmed deletion of science and associated granules from the Archive and Inventory. The science granules to delete are defined in a file containing ShortName, VersionID and LocalGranuleId.

22. Confirmed deletion of science and associated granules from the Archive and Inventory. The science granules to delete are defined in a file containing ShortName, VersionID and LocalGranuleId.

23. Confirmed deletion of science granules from the Archive and Inventory. The science granules to delete are defined in a file containing ShortName, VersionID and LocalGranuleId.

24. Unconfirmed deletion of science granules from the Archive and Inventory. The science granules to delete are defined in a file containing ShortName, VersionID and LocalGranuleId.

25. Confirmed deletion of referenced and un-referenced science granules from the Archive and Inventory. The science granules to delete are defined in a file containing ShortName, VersionID and LocalGranuleId.

26. Unconfirmed deletion of referenced and un-referenced science granules from the Archive and Inventory. The science granules to delete are defined in a file containing ShortName, VersionID and LocalGranuleId.

27. Confirmed deletion of referenced and un-referenced science granules and associated granules from the Archive and Inventory. The science granules to delete are defined in a file containing ShortName, VersionID and LocalGranuleId.

28. Unconfirmed deletion of referenced and un-referenced science granules and associated granules from the Archive and Inventory. The science granules to delete are defined in a file containing ShortName, VersionID and LocalGranuleId.

29. Confirmed deletion of science granules from the Archive. The science granules to delete are defined in a file containing ShortName, VersionID and LocalGranuleId.

30. Unconfirmed deletion of science granules from the Archive. The science granules to delete are defined in a file containing ShortName, VersionID and LocalGranuleId.

31. Confirmed deletion of science and associated granules from the Archive and Inventory. The science granules to delete are defined in a file containing SDSRV Granule Ids (basetype, shortname, version ID and db ID).

32. Unconfirmed deletion of science and associated granules from the Archive and Inventory. The science granules to delete are defined in a file containing SDSRV Granule Ids(basetype, shortname, version ID and db ID).

33. Confirmed deletion of science granules from the Archive and Inventory. The science granules to delete are defined in a file containing SDSRV Granule Ids (basetype, shortname, version ID and db ID).

34. Unconfirmed deletion of science granules from the Archive and Inventory. The science granules to delete are defined in a file containing SDSRV Granule Ids (basetype, shortname, version ID and db ID).

35. Confirmed deletion of referenced and un-referenced science granules from the Archive and Inventory. The science granules to delete are defined in a file containing SDSRV Granule Ids (basetype, shortname, version ID and db ID).

36. Unconfirmed deletion of referenced and un-referenced science granules from the Archive and Inventory. The science granules to delete are defined in a file containing SDSRV Granule Ids (basetype, shortname, version ID and db ID).

37. Confirmed deletion of referenced and un-referenced science granules and associated granules from the Archive and Inventory. The science granules to delete are defined in a file containing SDSRV Granule Ids (basetype, shortname, version ID and db ID).

38. Unconfirmed deletion of referenced and un-referenced science granules and associated granules from the Archive and Inventory. The science granules to delete are defined in a file containing SDSRV Granule Ids (basetype, shortname, version ID and db ID).

39. Confirmed deletion of science granules from the Archive. The science granules to delete are defined in a file containing SDSRV Granule Ids (basetype, shortname, version ID and db ID).

40. Unconfirmed deletion of science granules from the Archive. The science granules to delete are defined in a file that contains SDSRV Granule Ids (basetype, shortname, version ID and db ID).

41. Display science granules that are candidates for deletion. The science granules must meet the ShortName, VersionID and temporal range criteria input by the user.

42. Display science granules that are candidates for deletion. The science granules must meet the ShortName, VersionID and insert time range criteria input by the user.

43. Display science granules that are candidates for deletion. The science granules to delete are defined in a file containing ShortName, VersionID and LocalGranuleId.

44. Display science granules that are candidates for deletion. The science granules to delete are defined in a file containing SDSRV Granule Ids (basetype, shortname, version ID and db ID).

4.10.4.2.1 Confirmed Deletion of Science and Associated Granules from the Inventory and Archive by ESDT Short Name, Version ID and Data Temporal Coverage

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-name <ESDT ShortName

-version <ESDT VersionID>

-begindate <date>

-enddate <date>

-physical

This command physically deletes science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the temporal range specified by parameters <begindate> and <enddate>. Associated granules are also deleted as long as other granules do not reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –physical parameter specifies the granules are deleted from the Inventory and the Archive.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.2 Unconfirmed Deletion of Science and Associated Granules from the Inventory and Archive by ESDT Short Name, Version ID and Data Temporal

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-name <ESDT ShortName

-version <ESDT VersionID>

-begindate <date>

-enddate <date>

-physical

-noprompt

This command physically deletes science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the temporal range specified by parameters <begindate> and <enddate>. Associated granules are also deleted as long as other granules do not reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noprompt parameter specifies the user does not want to confirm the deletion of the granules.

4.10.4.2.3 Confirmed Deletion of Science Granules from the Inventory and Archive by ESDT Short Name, Version ID and Data Temporal Coverage

This command has the form:

```
EcDsGranuleDelete
 ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG
 ecs_mode <MODE>
 -log <logfilename>
 -name <ESDT ShortName
-version <ESDT VersionID>
 -begindate <date>
-enddate <date>
-physical
-noassoc
```

This command physically deletes science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the temporal range specified by parameters <begindate> and <enddate>.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noassoc parameter specifies the associated granules are not deleted even if other granules do not reference them.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.4 Unconfirmed Deletion of Science Granules from the Inventory and Archive by ESDT Short Name, Version ID and Data Temporal Coverage

This command has the form:

```
EcDsGranuleDelete
 ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG
 ecs_mode <MODE>
 -log <logfilename>
 -name <ESDT ShortName
-version <ESDT VersionID>
 -begindate <date>
-enddate <date>
```

-physical

-noassoc

-noprompt

This command physically deletes science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the temporal range specified by parameters <begindate> and <enddate>.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noassoc parameter specifies the associated granules are not deleted even if other granules do not reference them.

The -noprompt parameter specifies the user is not prompted to confirm the deletion.

4.10.4.2.5 Confirmed Deletion of Referenced and Unreferenced Science Granules from the Inventory and Archive by ESDT Short Name, Version ID and Data Temporal Coverage

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-name <ESDT ShortName

-version <ESDT VersionID>

-begindate <date>

-enddate <date>

-physical

-noassoc

-delref

This command physically deletes science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the temporal range specified by parameters <begindate> and <enddate>. The science granules should be deleted even if other granules reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noassoc parameter specifies the associated granules are not deleted even if other granules do not reference them.

The -delref parameter specifies the science granules should be deleted even if other granules reference them.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.6 Unconfirmed Deletion of Referenced and Unreferenced Science Granules from the Inventory and Archive by ESDT Short Name, Version ID and Data Temporal Coverage

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-name <ESDT ShortName

-version <ESDT VersionID>

-begindate <date>

-enddate <date>

-physical

-noassoc

-delref

-noprompt

This command physically deletes science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the temporal range specified by parameters <begindate> and <enddate>. The science granules should be deleted even if other granules reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noassoc parameter specifies the associated granules are not deleted even if other granules do not reference them.

The -delref parameter specifies the science granules should be deleted even if other granules reference them.

The -noprompt parameter specifies the granules should be deleted without a confirmation from the user.

4.10.4.2.7 Confirmed Deletion of Referenced and Unreferenced Science Granules and Associated Granules from the Inventory and Archive by ESDT Short Name, Version ID and Data Temporal Coverage

This command has the form:

```
EcDsGranuleDelete

 ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

 ecs_mode <MODE>

 -log <logfilename>

 -name <ESDT ShortName

-version <ESDT VersionID>

 -begindate <date>

-enddate <date>

-physical

-delref
```

This command physically deletes science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the temporal range specified by parameters <begindate> and <enddate>. The science granules should be deleted even if other granules reference them. Associated granules are also deleted as long as other granules do not reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -delref parameter specifies the science granules should be deleted even if other granules reference them.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.8 Unconfirmed Deletion of Referenced and Unreferenced Science Granules and Associated Granules from the Inventory and Archive by ESDT Short Name, Version ID and Data Temporal Coverage

This command has the form:

```
EcDsGranuleDelete
 ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG
 ecs_mode <MODE>
 -log <logfilename>
 -name <ESDT ShortName
-version <ESDT VersionID>
 -begindate <date>
-enddate <date>
-physical
-delref
-noprompt
```

This command physically deletes science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the temporal range specified by parameters <begindate> and <enddate>. The science granules should be deleted even if other granules reference them. Associated granules are also deleted as long as other granules do not reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -delref parameter specifies the science granules should be deleted even if other granules reference them.

The -noprompt parameter specifies the granules should be deleted without a confirmation from the user.

4.10.4.2.9 Confirmed Deletion of Science Granules from the Archive by ESDT Short Name, Version ID and Data Temporal Coverage

This command has the form:

```
EcDsGranuleDelete
 ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG
 ecs_mode <MODE>
 -log <logfilename>
 -name <ESDT ShortName
-version <ESDT VersionID>
```

-begindate <date>

-enddate <date>

-DFA

This command deletes from the Archive science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the temporal range specified by parameters <begindate> and <enddate>.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –DFA parameter specifies the granules are deleted from the Archive.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.10 Unconfirmed Deletion of Science Granules from the Archive by ESDT Short Name, Version ID and Data Temporal Coverage

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-name <ESDT ShortName

-version <ESDT VersionID>

-begindate <date>

-enddate <date>

-DFA

-noprompt

This command deletes from the Archive science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the temporal range specified by parameters <begindate> and <enddate>.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –DFA parameter specifies the granules are deleted from the Archive.

The -noprompt parameter specifies the granules should be deleted without a confirmation from the user.

4.10.4.2.11 Confirmed Deletion of Science and Associated Granules from the Archive and Inventory by ESDT Short Name, Version ID and Insert Time Range

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-name <ESDT ShortName>

-version <ESDT VersionID>

-insertbegin <date>

-insertend <date>

-physical

This command physically delete science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the insert time range specified by parameters <insertbegin> and <insertend>. Associated granules are also deleted as long as other granules do not reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –physical parameter specifies the granules are deleted from the Inventory and the Archive.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.12 Unconfirmed Deletion of Science and Associated Granules from the Archive and Inventory by ESDT Short Name, Version ID and Insert Time Range

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-name <ESDT ShortName>

-version <ESDT VersionID>

-insertbegin <date>

```
-insertend <date>

-physical

-noprompt
```

This command physically deletes science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the insert time range specified by parameters <insertbegin> and <insertend>. Associated granules are also deleted as long as other granules do not reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noprompt parameter specifies the user does not want to confirm the deletion of the granules.

4.10.4.2.13 Confirmed Deletion of Science Granules from the Archive and Inventory by ESDT Short Name, Version ID and Insert Time Range

This command has the form:

```
EcDsGranuleDelete

 ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-name <ESDT ShortName>

-version <ESDT VersionID>

-insertbegin <date>

-insertend <date>

-physical

-noassoc
```

This command physically delete science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the insert time range specified by parameters <insertbegin> and <insertend>.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noassoc parameter specifies the associated granules are not deleted even if other granules do not reference them.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.14 Unconfirmed Deletion of Science Granules from the Archive and Inventory by ESDT Short Name, Version ID and Insert Time Range

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-name <ESDT ShortName>

-version <ESDT VersionID>

-insertbegin <date>

-insertend <date>

-physical

-noassoc

-noprompt

This command physically delete science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the insert time range specified by parameters <insertbegin> and <insertend>.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noassoc parameter specifies the associated granules are not deleted even if other granules do not reference them.

The -noprompt parameter specifies the user does not want to confirm the deletion of the granules.

4.10.4.2.15 Confirmed Deletion of Referenced and Unreferenced Science Granules from the Archive and Inventory by ESDT Short Name, Version ID and Insert Time Range

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-name <ESDT ShortName>

-version <ESDT VersionID>

-insertbegin <date>

-insertend <date>

-physical

-noassoc

-delref

This command physically delete science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the insert time range specified by parameters <insertbegin> and <insertend>.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noassoc parameter specifies the associated granules are not deleted even if other granules do not reference them.

The -delref parameter specifies the science granules should be deleted even if other granules reference them.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.16 Unconfirmed Deletion of Referenced and Unreferenced Science Granules from the Archive and Inventory by ESDT Short Name, Version ID and Insert Time Range

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-name <ESDT ShortName>

-version <ESDT VersionID>

-insertbegin <date>

-insertend <date>

-physical

-noassoc

-delref

-noprompt

This command physically delete science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the insert time range specified by parameters <insertbegin> and <insertend>.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noassoc parameter specifies the associated granules are not deleted even if other granules do not reference them.

The -delref parameter specifies the science granules should be deleted even if other granules reference them.

The -noprompt parameter specifies the user is not prompted to confirm the deletion.

4.10.4.2.17 Confirmed Deletion of Referenced and Unreferenced Science Granules and Associated Granules from the Archive and Inventory by ESDT Short Name, Version ID and Insert Time Range

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-name <ESDT ShortName>

-version <ESDT VersionID>

-insertbegin <date>

-insertend <date>

-physical

-delref

This command physically delete science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the insert time range specified by parameters <insertbegin> and <insertend>.   Associated granules are also deleted as long as other granules do not reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -delref parameter specifies the science granules should be deleted even if other granules reference them.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.18 Unconfirmed Deletion of Referenced and Unreferenced Science Granules and Associated Granules from the Archive and Inventory by ESDT Short Name, Version ID and Insert Time Range

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-name <ESDT ShortName>

-version <ESDT VersionID>

-insertbegin <date>

-insertend <date>

-physical

-delref

-noprompt

This command physically delete science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the insert time range specified by parameters <insertbegin> and <insertend>.   Associated granules are also deleted as long as other granules do not reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -delref parameter specifies the science granules should be deleted even if other granules reference them.

The -noprompt parameter specifies the user is not prompted to confirm the deletion.

4.10.4.2.19 Confirmed Deletion of Science Granules from the Archive by Short Name, Version ID and Insert Time Range

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-name <ESDT ShortName>

-version <ESDT VersionID>

-insertbegin <date>

-insertend <date>

-DFA

This command deletes from the Archive science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the insert time range specified by parameters <insertbegin> and <insertend>.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –DFA parameter specifies the granules are deleted from the Archive.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.20 Unconfirmed Deletion of Science Granules from the Archive by Short Name, Version ID and Insert Time Range

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-name <ESDT ShortName>

-version <ESDT VersionID>

-insertbegin <date>

-insertend <date>

-DFA

-noprompt

This command deletes from the Archive science granules specified by <ESDT_Shortname> and <ESDT_VersionID> and within the insert time range specified by parameters <insertbegin> and <insertend>.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The –DFA parameter specifies the granules are deleted from the Archive.

The -noprompt parameter specifies the user is not prompted to confirm the deletion.

4.10.4.2.21 Confirmed Deletion of Science and Associated Granules from the Inventory and Archive by ESDT Short Name, Version ID and Local Granule Id

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-localgranulefile <filename>

-physical

This command physically deletes science granules defined in a file containing ESDT ShortName, ESDT Version ID and Local Granule Id. Associated granules are also deleted as long as other granules do not reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -localgranulefile parameter specifies the file that contains the science granules to delete. The file contains ESDT Short Name, ESDT Version ID and Local Granule Id.

The -physical parameter specifies the granules are deleted from the Inventory and the Archive.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.22 Unconfirmed Deletion of Science and Associated Granules from the Inventory and Archive by ESDT Short Name, Version ID and Local Granule Id

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-localgranulefile <filename>

-physical

-noprompt

This command physically deletes science granules defined in a file containing ESDT ShortName, ESDT Version ID and Local Granule Id. Associated granules are also deleted as long as other granules do not reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -localgranulefile parameter specifies the file containing the science granules to delete. The file contains ESDT Short Name, ESDT Version ID and Local Granule Id.

The -physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noprompt parameter specifies the user is not prompted to confirm the deletion.

4.10.4.2.23 Confirmed Deletion of Science Granules from the Inventory and Archive by ESDT Short Name, Version ID and Local Granule Id

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-localgranulefile <filename>

-physical

-noassoc

This command physically deletes science granules defined in a file containing ESDT ShortName, ESDT Version ID and Local Granule Id.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -localgranulefile parameter specifies the file containing the science granules to delete. The file contains ESDT Short Name, ESDT Version ID and Local Granule Id.

The -physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noassoc parameter specifies the associated granules are not deleted even if other granules do not reference them.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.24 Unconfirmed Deletion of Science Granules from the Inventory and Archive by ESDT Short Name, Version ID and Local Granule Id

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-localgranulefile <filename>

-physical

-noassoc

This command physically deletes science granules defined in a file containing ESDT ShortName, ESDT Version ID and Local Granule Id.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -localgranulefile parameter specifies the file containing the science granules to delete. The file contains ESDT Short Name, ESDT Version ID and Local Granule Id.

The -physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noassoc parameter specifies the associated granules are not deleted even if other granules do not reference them.

The -noprompt parameter specifies the user does not want to confirm the deletion of the granules.

4.10.4.2.25 Confirmed Deletion of Referenced and Unreferenced Science Granules from the Inventory and Archive by ESDT Short Name, Version ID and Local Granule Id

The command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-localgranulefile <filename>

-physical

-noassoc

-delref

This command physically deletes science granules defined in a file containing ESDT ShortName, ESDT Version ID and Local Granule Id.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -localgranulefile parameter specifies the file containing the science granules to delete. The file contains ESDT Short Name, ESDT Version ID and Local Granule Id.

The -physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noassoc parameter specifies the associated granules are not deleted even if other granules do not reference them.

The -delref parameter specifies the science granules should be deleted even if other granules reference them.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.26 Unconfirmed Deletion of Referenced and Unreferenced Science Granules from the Inventory and Archive by ESDT Short Name, Version ID and Local Granule Id

The command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-localgranulefile <filename>

-physical

-noassoc

-delref

This command physically deletes science granules defined in a file containing ESDT ShortName, ESDT Version ID and Local Granule Id.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -localgranulefile parameter specifies the file containing the science granules to delete. The file contains ESDT Short Name, ESDT Version ID and Local Granule Id.

The -physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noassoc parameter specifies the associated granules are not deleted even if other granules do not reference them.

The -delref parameter specifies the science granules should be deleted even if other granules reference them.

The -noprompt parameter specifies the user is not prompted to confirm the deletion.

4.10.4.2.27 Confirmed Deletion of Referenced and Unreferenced Science Granules and Associated Granules from the Inventory and Archive by ESDT Short Name, Version ID and Local Granule Id

The command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-localgranulefile <filename>

-physical

-delref

This command physically deletes science granules defined in a file containing ESDT ShortName, ESDT Version ID and Local Granule Id. Associated granules are also deleted as long as other granules do not reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -localgranulefile parameter specifies the file containing the science granules to delete. The file contains ESDT Short Name, ESDT Version ID and Local Granule Id.

The -physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -delref parameter specifies the science granules should be deleted even if other granules reference them.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.28 Unconfirmed Deletion of Referenced and Unreferenced Science Granules and Associated Granules from the Inventory and Archive by ESDT Short Name, Version ID and Local Granule Id

The command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-localgranulefile <filename>

-physical

-delref

-noprompt

This command physically deletes science granules defined in a file containing ESDT ShortName, ESDT Version ID and Local Granule Id. Associated granules are also deleted as long as other granules do not reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -localgranulefile parameter specifies the file containing the science granules to delete. The file contains ESDT Short Name, ESDT Version ID and Local Granule Id.

The -physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -delref parameter specifies the science granules should be deleted even if other granules reference them.

The -noprompt parameter specifies the user is not prompted to confirm the deletion.

4.10.4.2.29 Confirmed Deletion of Science Granules from the Archive by ESDT Short Name, Version ID and Local Granule Id

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-localgranulefile <filename>

-DFA

This command deletes from the Archive science granules defined in a file containing ESDT ShortName, ESDT Version ID and Local Granule Id.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -localgranulefile parameter specifies the file containing the science granules to delete. The file contains ESDT Short Name, ESDT Version ID and Local Granule Id.

The -DFA parameter specifies the granules are deleted from the Archive.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.30 Unconfirmed Deletion of Science Granules from the Archive by ESDT Short Name, Version ID and Local Granule Id

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-localgranulefile <filename>

-DFA

-noprompt

This command deletes from the Archive science granules defined in a file containing ESDT ShortName, ESDT Version ID and Local Granule Id.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -localgranulefile parameter specifies the file containing the science granules to delete. The file contains ESDT Short Name, ESDT Version ID and Local Granule Id.

The -DFA parameter specifies the granules are deleted from the Archive.

The -noprompt parameter specifies the granules should be deleted without confirmation from the user.

4.10.4.2.31 Confirmed Deletion of Science and Associated Granules from the Inventory and Archive by SDSRV Granule Id

The command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-geoidfile <filename>

-physical

This command physically deletes science granules specified by SDSRV Granule Id. Associated granules are also deleted as long as other granules do not reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -geoidfile parameter specifies the file containing the science granules to delete. The file contains SDSRV Granule Ids.

The -physical parameter specifies the granules are deleted from the Inventory and the Archive.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.32 Unconfirmed Deletion of Science and Associated Granules from the Inventory and Archive by SDSRV Granule Id

The command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-geoidfile <filename>

-physical

-noprompt

This command physically deletes science granules specified by SDSRV Granule Id. Associated granules are also deleted as long as other granules do not reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -geoidfile parameter specifies the file containing the science granules to delete. The file contains SDSRV Granule Ids.

The -physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noprompt parameter specifies the user does not want to confirm the deletion of the granules.

4.10.4.2.33 Confirmed Deletion of Science Granules from the Inventory and Archive by SDSRV Granule Id

The command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-geoidfile <filename>

-physical

-noassoc

This command physically deletes science granules specified by SDSRV Granule Id.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -geoidfile parameter specifies the file containing the science granules to delete. The file contains SDSRV Granule Ids.

The -physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noassoc parameter specifies the associated granules are not deleted even if other granules do not reference them.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.34 Unconfirmed Deletion of Science Granules from the Inventory and Archive by SDSRV Granule Id

The command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-geoidfile <filename>

-physical

-noassoc

-noprompt

This command physically deletes science granules specified by SDSRV Granule Id.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -geoidfile parameter specifies the file containing the science granules to delete. The file contains SDSRV Granule Ids.

The -physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noassoc parameter specifies the associated granules are not deleted even if other granules do not reference them.

The -noprompt parameter specifies the user does not want to confirm the deletion of the granules.

4.10.4.2.35 Confirmed Deletion of Referenced and Unreferenced Science Granules from the Inventory and Archive by SDSRV Granule Id

The command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-geoidfile <filename>

-physical

-noassoc

-delref

This command physically deletes science granules specified by SDSRV Granule Id.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -geoidfile parameter specifies the file containing the science granules to delete. The file contains SDSRV Granule Ids.

The -physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noassoc parameter specifies the associated granules are not deleted even if other granules do not reference them.

The -delref parameter specifies the science granules should be deleted even if other granules reference them.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.36 Unconfirmed Deletion of Referenced and Unreferenced Science Granules from the Inventory and Archive by SDSRV Granule Id

The command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-geoidfile <filename>

-physical

-noassoc

-noprompt

This command physically deletes science granules specified by SDSRV Granule Id.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -geoidfile parameter specifies the file containing the science granules to delete. The file contains SDSRV Granule Ids.

The -physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -noassoc parameter specifies the associated granules are not deleted even if other granules do not reference them.

The -delref parameter specifies the science granules should be deleted even if other granules reference them.

The -noprompt parameter specifies the user does not want to confirm the deletion of the granules.

4.10.4.2.37 Confirmed Deletion of Referenced and Unreferenced Science Granules and Associated Granules from the Inventory and Archive by SDSRV Granule Id

The command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-geoidfile <filename>

-physical

-delref

This command physically deletes science granules specified by SDSRV Granule Id. Associated granules are also deleted as long as other granules do not reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -geoidfile parameter specifies the file containing the science granules to delete. The file contains SDSRV Granule Ids.

The -physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -delref parameter specifies the science granules should be deleted even if other granules reference them.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.38 Unconfirmed Deletion of Referenced and Unreferenced Science Granules from the Inventory and Archive by SDSRV Granule Id

The command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-geoidfile <filename>

-physical

-noprompt

This command physically deletes science granules specified by SDSRV Granule Id. Associated granules are also deleted as long as other granules do not reference them.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -geoidfile parameter specifies the file containing the science granules to delete. The file contains SDSRV Granule Ids.

The -physical parameter specifies the granules are deleted from the Inventory and the Archive.

The -delref parameter specifies the science granules should be deleted even if other granules reference them.

The -noprompt parameter specifies the user does not want to confirm the deletion of the granules.

4.10.4.2.39 Confirmed Deletion of Science Granules from Archive SDSRV Granule Id

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-geoidfile <filename>

-DFA

This command deletes from the Archive science granules defined in a file containing SDSRV Granule Ids.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -geoidfile parameter specifies the file containing the science granules to delete. The file contains SDSRV Granule Ids.

The -DFA parameter specifies the granules are deleted from the Archive.

The number of candidate science granules to be deleted is displayed and the user is prompted to confirm the deletion.

4.10.4.2.40 Unconfirmed Deletion of Science Granules from Archive by SDSRV Granule Id

This command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-geoidfile <filename>

-DFA

-noprompt

This command deletes from the Archive science granules defined in a file containing SDSRV Granule Ids.

The <logfilename> parameter specifies the log file the deletion process should use to write deletion activity.

The -geoidfile parameter specifies the file containing the science granules to delete. The file contains SDSRV Granule Ids.

The -DFA parameter specifies the granules are deleted from the Archive.

The -noprompt parameter specifies the granules should be deleted without confirmation from the user.

4.10.4.2.41 Display Science Granules Specified by Short Name, Version Id and Data Temporal Range

The command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-name <ESDT ShortName>

-version <ESDT VersionID>

-begindate <date>

-enddate <date>

-display

This command displays the science granules that would be deleted if the command were executed without the -display. The science granules are specified by parameters <ESDT ShortName> and <ESDT_VersionID> within the temporal range specified by parameters <begindate> and <enddate>.

The <logfilename> parameter specifies the log file where the candidate science granules are written. The SDSRV Granule Id and Local Granule Id is written to the log for each science granule that is a candidate for deletion.

The SDSRV Granule Id and Local Granule Id of each candidate granule is displayed to the user along with the total number of granules.

4.10.4.2.42 Display Science Granules Specified by Short Name, Version Id and Insert Time Range

The command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-name <ESDT ShortName>

-version <ESDT VersionID>

-insertbegin <date>

-insertend <date>

-display

This command displays the science granules that would be deleted if the command were executed without the -display. The science granules are specified by parameters <ESDT

ShortName> and <ESDT_VersionID> within the insert time range specified by the parameters <insertbegin> and <insertend>.

The <logfilename> parameter specifies the log file where the candidate science granules are written. The SDSRV Granule Id and Local Granule Id is written to the log for each science granule that is a candidate for deletion.

The SDSRV Granule Id and Local Granule Id of each candidate granule is displayed to the user along with the total number of granules.

4.10.4.2.43 Display Science Granules Specified by Short Name, Version Id and Local Granule Id

The command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-localgranulefile <filename>

-display

This command displays the science granules that would be deleted if the command were executed without the -display. The science granules are specified by parameters <ESDT ShortName> and <ESDT_VersionID> and Local Granule Id.

The <logfilename> parameter specifies the log file where the candidate science granules are written. The SDSRV Granule Id and Local Granule Id is written to the log for each science granule that is a candidate for deletion.

The -localgranulefile parameter specifies the file containing the science granules to delete. The file contains ESDT Short Name, ESDT Version ID and Local Granule Id.

The SDSRV Granule Id and Local Granule Id of each candidate granule is displayed to the user along with the total number of granules.

4.10.4.2.44 Display Science Granules Specified SDSRV Granule Id

The command has the form:

EcDsGranuleDelete

ConfigFile usr/ecs/CUSTOM/<MODE>/cfg/EcDsGranuleDelete.CFG

ecs_mode <MODE>

-log <logfilename>

-geoidfile <filename>

-display

This command displays the science granules that would be deleted if the command were executed without the -display. SDSRV Granule Id specifies the science granules.

The <logfilename> parameter specifies the log file where the candidate science granules are written. The SDSRV Granule Id and Local Granule Id is written to the log for each science granule that is a candidate for deletion.

The -geoidfile parameter specifies the file containing the science granules to delete. The file contains SDSRV Granule Ids.

The SDSRV Granule Id and Local Granule Id of each candidate granule is displayed to the user along with the total number of granules.

4.10.4.3 Required Operating Environment

For information on the operating environment, tunable parameters, and environment variables refer to the 920-TDA-022 "Custom Code Configuration Parameters" documentation series.

4.10.4.3.1 Interfaces and Data Types

Table 4.10.4-2 lists the supporting products this tool depends upon to function properly.

Table 4.10.4-2. Interface Protocols

Product Dependency	Protocols Used	Comments
SDSRV and all clients	Socket	Via client libraries

4.10.4.4 Databases

The Granule Deletion Administration tool does not include the direct managing of any database. It has an interface with the Science Data Server Data Base: however this interface is based on a simple parameter passing function. For further information of the Science Data Server Data Base refer to 311-CD-624, *Science Data Server Database Design and Schema Specifications for the ECS Project*.

4.10.4.5 Special Constraints

The Granule Deletion Administration Tool runs only if the Science Data Server is running in the background. Note also when the Granule Deletion Administration Tool is started through a command line, the command line specifies the configuration file used to initialize the application.

4.10.4.6 Outputs

None.

4.10.4.7 Event and Error Messages

None.

4.10.4.8 Reports

None.

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4.10.5 Product Distribution System (PDS) Stand Alone (PDSSA) User Interface

PDSSA is a package developed by the United States Geological Survey (USGS) at the Eros Data Center (EDC). PDSSA has been integrated with ECS to support the distribution of ordered product data to science users for delivery on 8mm tape, DLT, DVD-ROM and CD-ROM media.

PDSSA interfaces with the ECS Order Tracking function to provide status on the progress of filling an order and with the ECS Science Data Server (SDSRV) for obtaining the product to be delivered.

PDSSA supports three independently invoked Oracle Forms-based user interfaces. The first interface, the PDS Operator Interface (PDSOI), provides basic support for starting and completing jobs, separating active jobs from inactive ones, and to manage the routine product distribution process. The second interface, the PDS Maintenance Interface (PDSMI), allows lead operations personnel to perform maintenance on the database parameters controlling the distribution process. The third interface, the PDS Job Monitor (PDSJM), complements the PDSOI by providing more detailed job status. It lists running PDS jobs and displays the specific stage of each job. On request, it presents detailed job information to support problem investigation.

This document provides an introductory overview of the PDS user interfaces in the ECS environment. A detailed description of the PDS user interface is provided in the document, *Product Distribution System Stand Alone (PDSSA) User Guide*, USGS/EDC, PDS-114, dated March 2001.

4.10.5.1 Quick Start Using PDS

Each of the three PDS user interfaces is invoked through a unique Unix script. Prior to invoking these scripts the DISPLAY environment variable should be initialized as shown:

>**setenv DISPLAY <machine_id>**

Following the setting of the DISPLAY variable; to invoke the primary operations support interface, PDSOI, enter:

>**pdsoi &**

To invoke the PDSMI, enter the following command:

>**pdsmaint &**

To invoke the PDSJM, enter the following commands:

>**cd <PDS home directory>**   (Change the directory to the PDS home directory)

>**jobmonitor &**

Entry of these commands result in the display of the main screens associated with the support category as described in the following section.

4.10.5.2 PDSOI Main Screen

Figure 4.10.5-1 is the PDSOI Main screen at startup. The pulldown list at center-screen is used to select a machine on which to run. The user then enters a console ID.

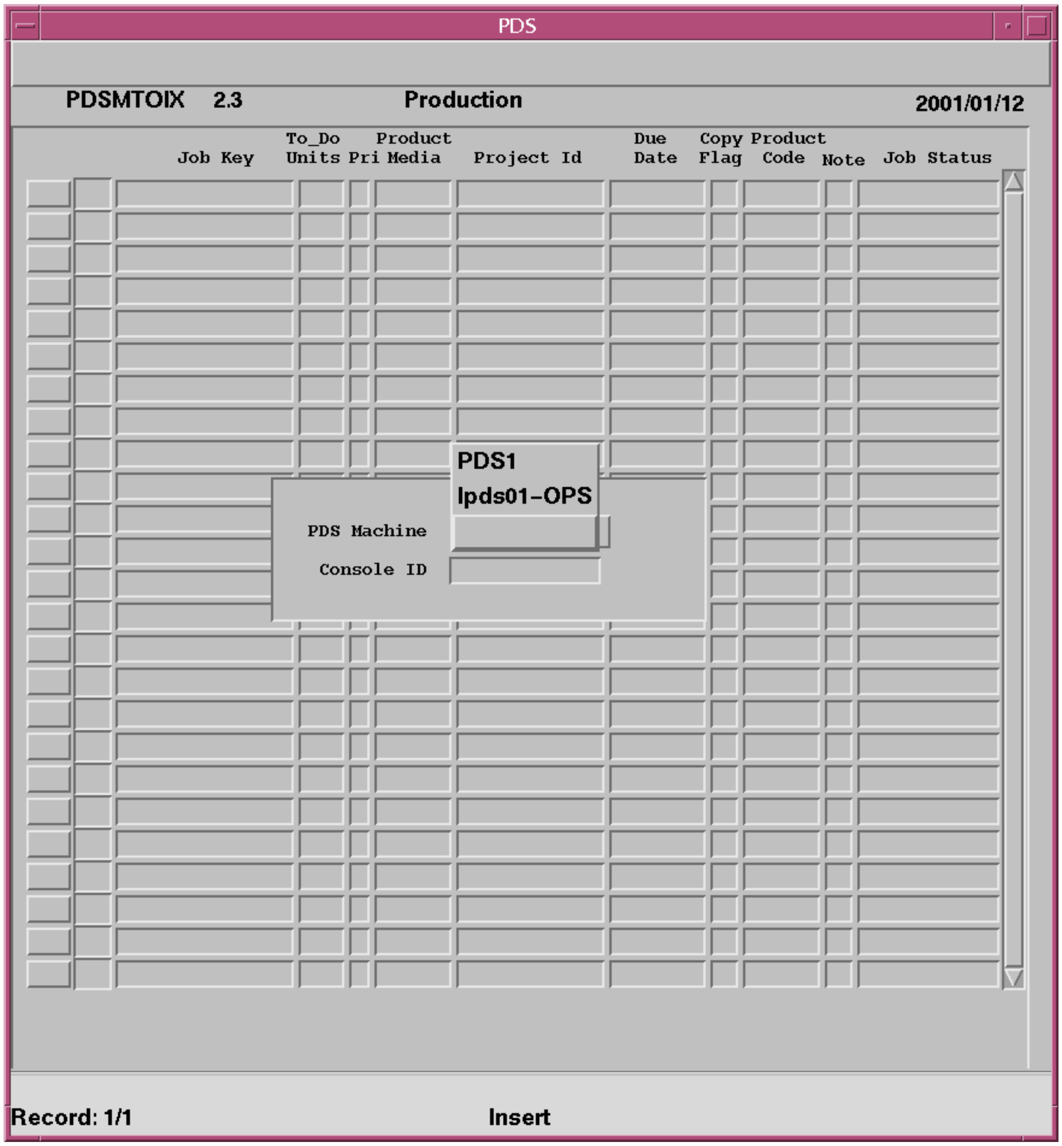


Figure 4.10.5-1. PDSOI Main Screen at Startup

On selection of a machine and entering an operator ID on the PDSOI Main Screen at startup, the Selection Criteria screen appears.

4.10.5.2.1 PDSOI Selection Criteria Screen

Figure 4.10.5-2 is the Selection Criteria Screen. It allows for selection of **ALL** or a subset of the PDS jobs to be presented based on **Priority**, **Product Media** type, exceeding the **Due Date**, or **Product Code**.

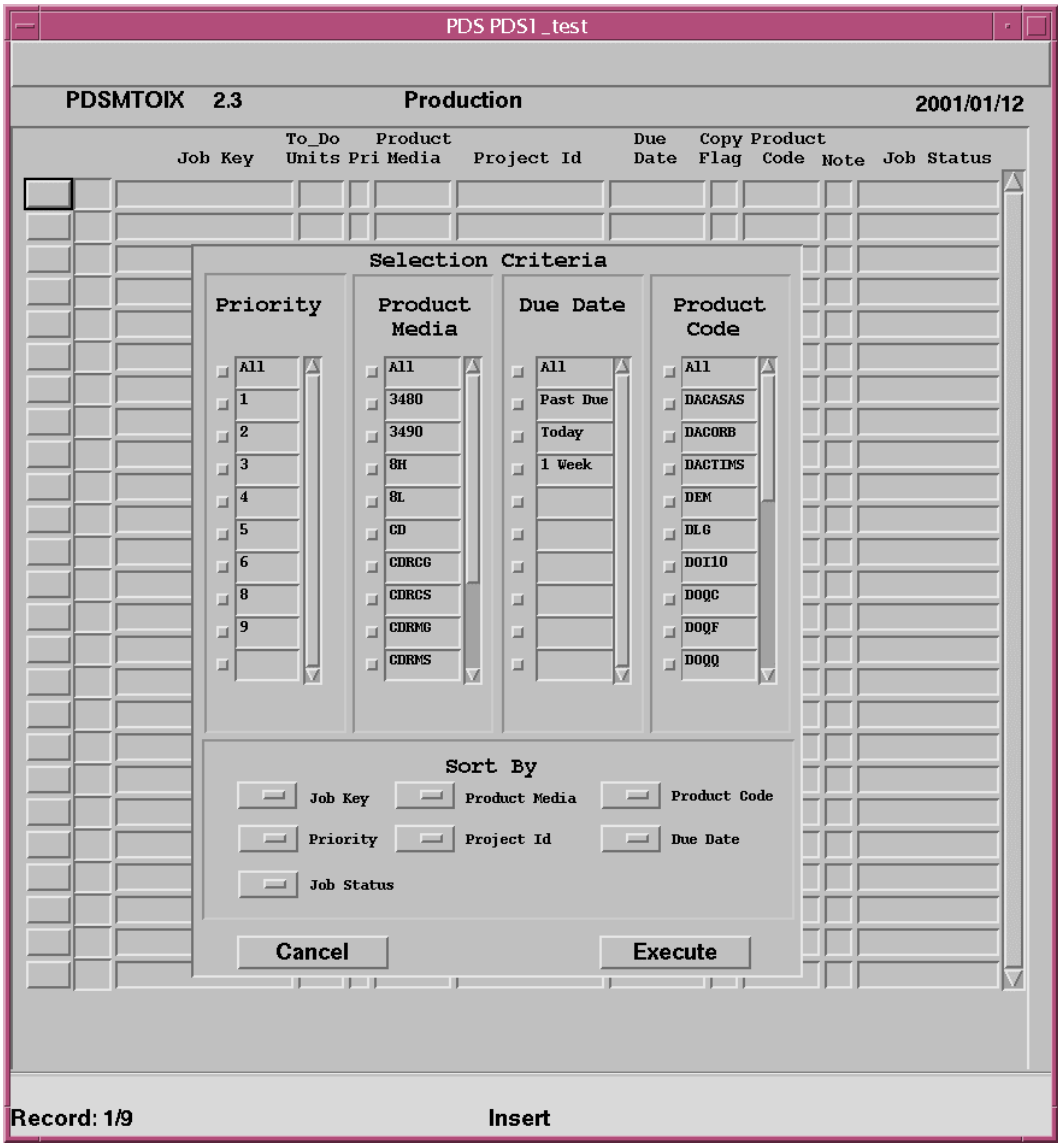
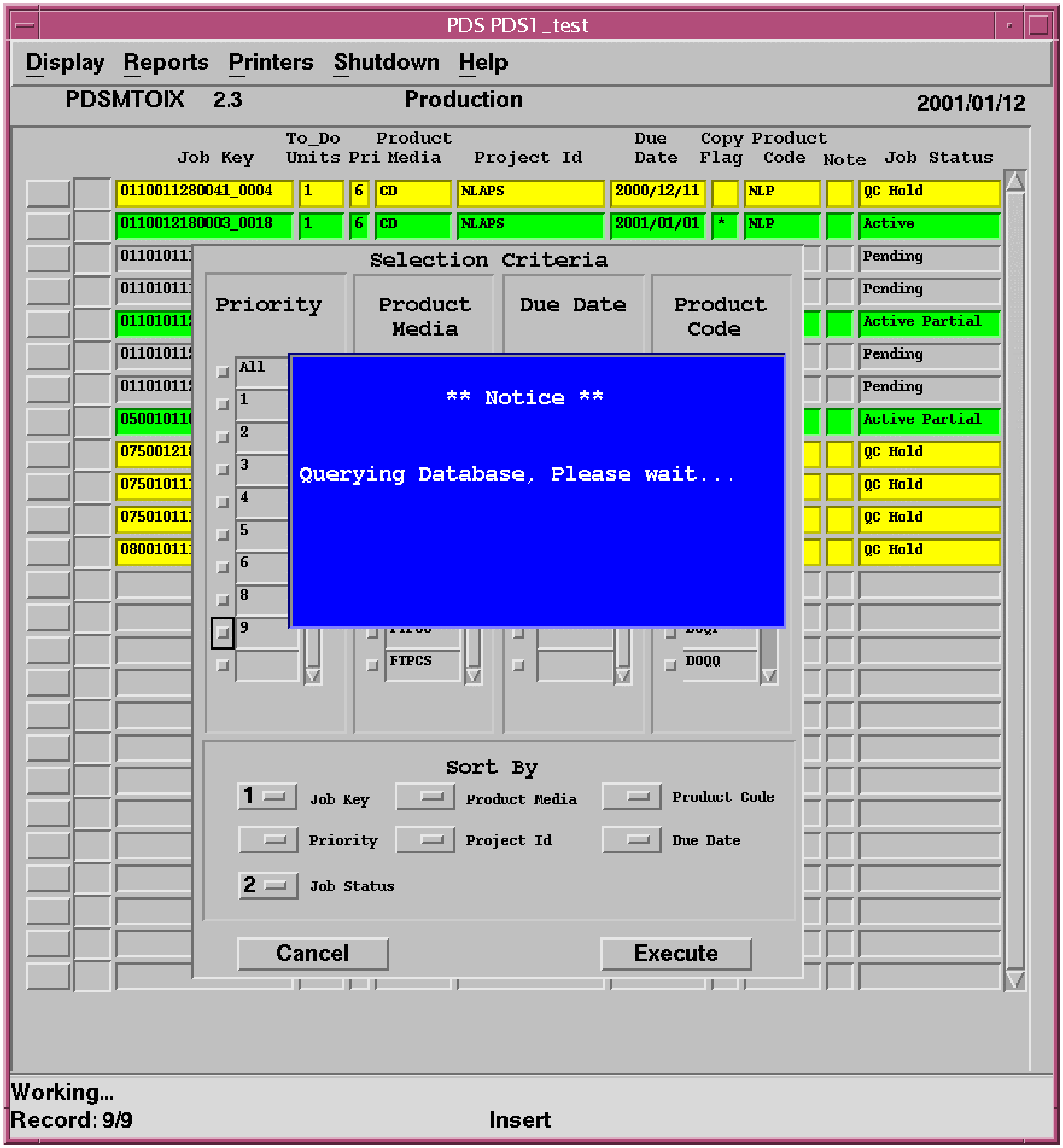


Figure 4.10.5-2. Selection Criteria Screen

The Selection Criteria screen also allows for selection of sorting criteria to apply to the displayed jobs such as Job Key, Priority, Job Status, Product Media, Project ID, Product Code, and Due Date. Sorting order is determined by the sequence the criteria are specified. For instance, if Priority and Job Key are selected as the sort criteria, the jobs are listed in priority order and then job key within a priority level. On selecting the jobs to be displayed and the sorting criteria, hitting the Execute button causes the Querying Database screen to come up.

4.10.5.2.2 PDS Querying Database Screen

The Querying Database Screen, shown in Figure 4.10.5-3, appears while PDS is querying the database and creating the job status list display per the user specified selection criteria.



PDSMTOIX 2.3 Production 2001/01/12

Job Key	To_Do Units	Pri	Product Media	Project Id	Due Date	Copy Flag	Product Code	Note	Job Status
0110011280041_0004	1	6	CD	NLAPS	2000/12/11		NLP		QC Hold
0110012180003_0018	1	6	CD	NLAPS	2001/01/01	*	NLP		Active
01101011									Pending
01101011									Pending
01101011									Active Partial
01101011									Pending
01101011									Pending
05001011									Active Partial
07500121									QC Hold
07501011									QC Hold
07501011									QC Hold
08001011									QC Hold

Selection Criteria

Priority: All, 1, 2, 3, 4, 5, 6, 8, 9

Product Media: FTPCS

Due Date

Product Code: DOQQ

Sort By

1	Job Key		Product Media		Product Code
	Priority		Project Id		Due Date
2	Job Status				

** Notice **

Querying Database, Please wait...

Working...
Record: 9/9 Insert

Figure 4.10.5-3. Querying Database Screen

On completion of the database query, the blue Querying Database screen disappears and the list of selected jobs is displayed. A job status line on the display contains an Action button, the Job Key, the To Do Units count, the Priority, the Product Media for delivery, the Project ID, the Due Date, a Copy Flag, a Product Code, a Note field, and the Job Status. The status of each displayed job is indicated by color code where:

- **Green** indicates an Active or Active Partial job.
- **Yellow** indicates the job is on Quality Control (QC) Hold or QC Hold Partial
- **Grey** indicates status is Pending
- **Red** indicates job Error or Error-Partial.

Pressing the Action button for a job produces a list of actions that can be taken on that job. These actions include:

- **Activate** - Starts the process of generating the data.
- **Detail** – Results in the display of the Detail window showing the status of all execution units for the job.
- **Complete** – Allows the operator to complete units within a job.
- **Stop Job** – Forces the job into STOP state.
- **Notes** – This action displays a Notes window for the job, which the operator can review and/or update.

4.10.5.2.3 PDS Maintenance Interface (PDSMI)

The second component of the PDSSA is the PDS Maintenance module. It allows a PDS lead operator to configure the database tables used by PDSOI. On invocation of the startup script, a login window appears requesting a login-id, password., and the database to be referenced. The database field does not need to be filled in as it defaults to the correct database. Note also, that knowledge of the password for this function should be restricted to use by lead operations personnel. On hitting the Connect button on the login screen, the PDSMI Maintenance Main Screen, shown in Figure 4.10.5-4 appears. It displays the database instance being run and 12 option buttons to select areas for review/update.

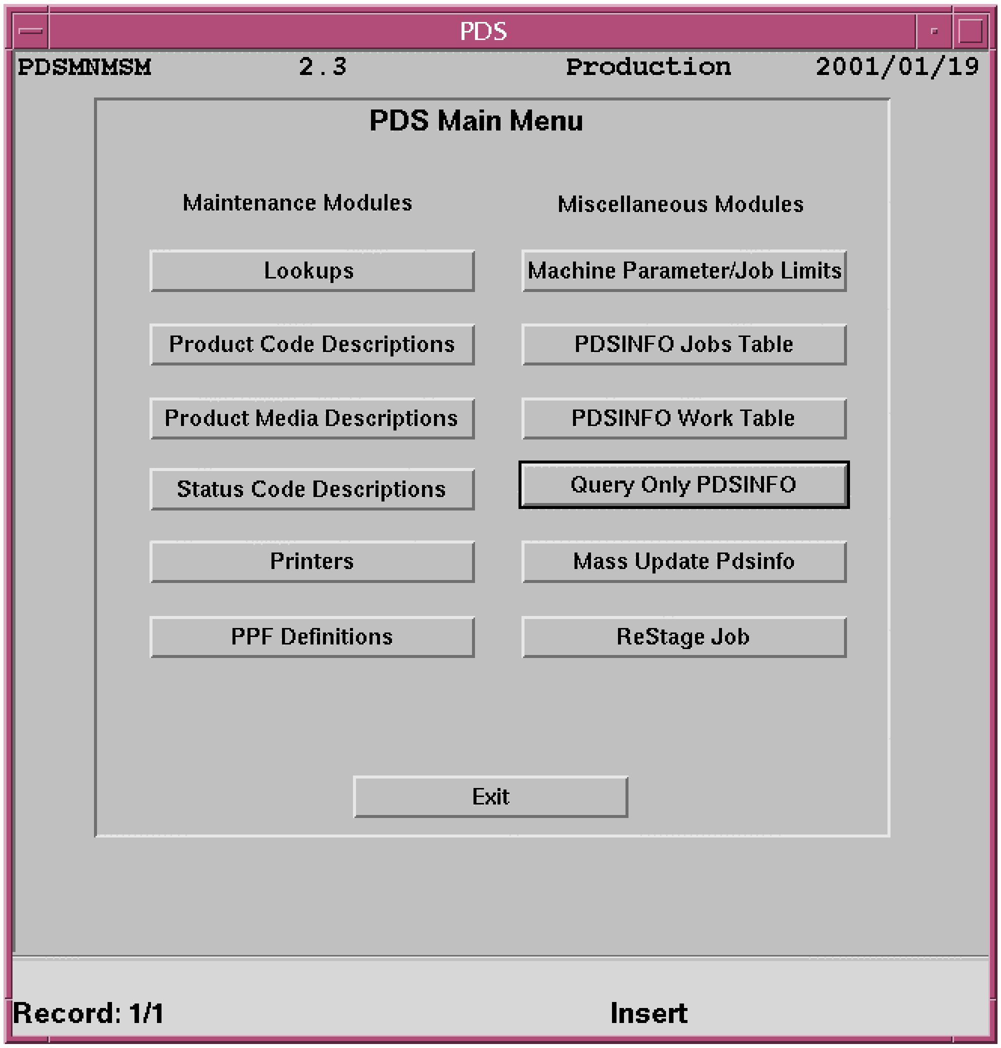


Figure 4.10.5-4. PDSMI Maintenance Main Screen

The **Maintenance Module** buttons include:

- **Lookups** – This button brings up the Lookups Maintenance Screen containing information from the table LKT_LOOKUPS_TBL. It contains items like defaults, pick lists, SQL code fragments etc. This form is used mainly for display purposes. Records should never be added or deleted unless directed by the PDSOI software staff.

- **Product Code Descriptions** –This button brings up the Product Code Description Maintenance screen containing information from the table PVT_PRCDTBL_TBL. Every product code used in the pdsinfo table needs to have an entry in this table. All fields need to be completed in order for the PDSOI to use these Product Codes.

Records should never be added or deleted from this form unless directed by the PDSOI software staff.

- **Product Media Descriptions** – This button invokes the Product Media Description Maintenance screen, which displays information in the table OUT_OTSPTBLV_TBL. Every output specification used in the pdsinfo table needs to have an entry in this table. All fields need to be filled in for the PDSOI to use these Product Media. Records should never be added or deleted from this form unless directed by the PDSOI software staff.
- **Status Code Descriptions** – This button brings up a screen containing status code descriptions.
- **Printers** – This button brings up the Printer Maintenance screen containing information from the table PXT_PRINTERS_TBL. A table is needed to validate printers and edit check and limit the printers used for various printing tasks. This screen allows for querying records or adding records. When adding records, the Printer ID and Short Name are free form text you can type in. The Printer Type must match one of the choices from a standard list.
- **PPF Definitions** – This button brings up the PPF Definitions Maintenance screen displaying information from the table PTT_PDS_PPF_TBL. The .ppf file used by the product generation software is created using entries from this table. There are a number of records having a Product Code value of "ALL." This means these fields are included in every .ppf file created.

The **Miscellaneous Modules** buttons on the Maintenance Main screen include:

- **Machine Parameter/Job Limits** – This button brings up the Machine Parameters Maintenance screen containing information from the table MCT_MACHINFO_TBL. It contains machine specific information and is used mainly for display purposes. Records should never be added or deleted from this form unless directed by the PDSOI software staff. A query must be performed on the machine name to get to the job limits portion of this form. Once a query has been executed use the arrows to scroll to the Machine Id. Clicking on the "Next Block" button causes the detail portion of the form to appear. Note, the label on this button now changes to "Previous Block". Selecting this button brings back the machine parameters portion of the form. The master portion of the form continues to be displayed, but the buttons only work against the detail or Job Limit portion of the form. To maneuver back to the master or Machine Parameters Maintenance portion of the form, press the "Previous Block" button.
- **PDSINFO Jobs Table** –This button invokes the PDSINFO Jobs Table Maintenance screen, which contains information from the table PJT_PDSINFO_JOBS. This form is used when investigating and fixing error conditions. Many of the fields on the PDSOI Main screen derive from this table.

- **PDSINFO Work Table** – This button brings up the PDSINFO Table Maintenance screen containing information from the table PWT_PDS_WORK_TBL, as well as some fields from the PDT_PDSINFO table. Because this form has fields from two tables, it is best when making changes to save the changes before proceeding.

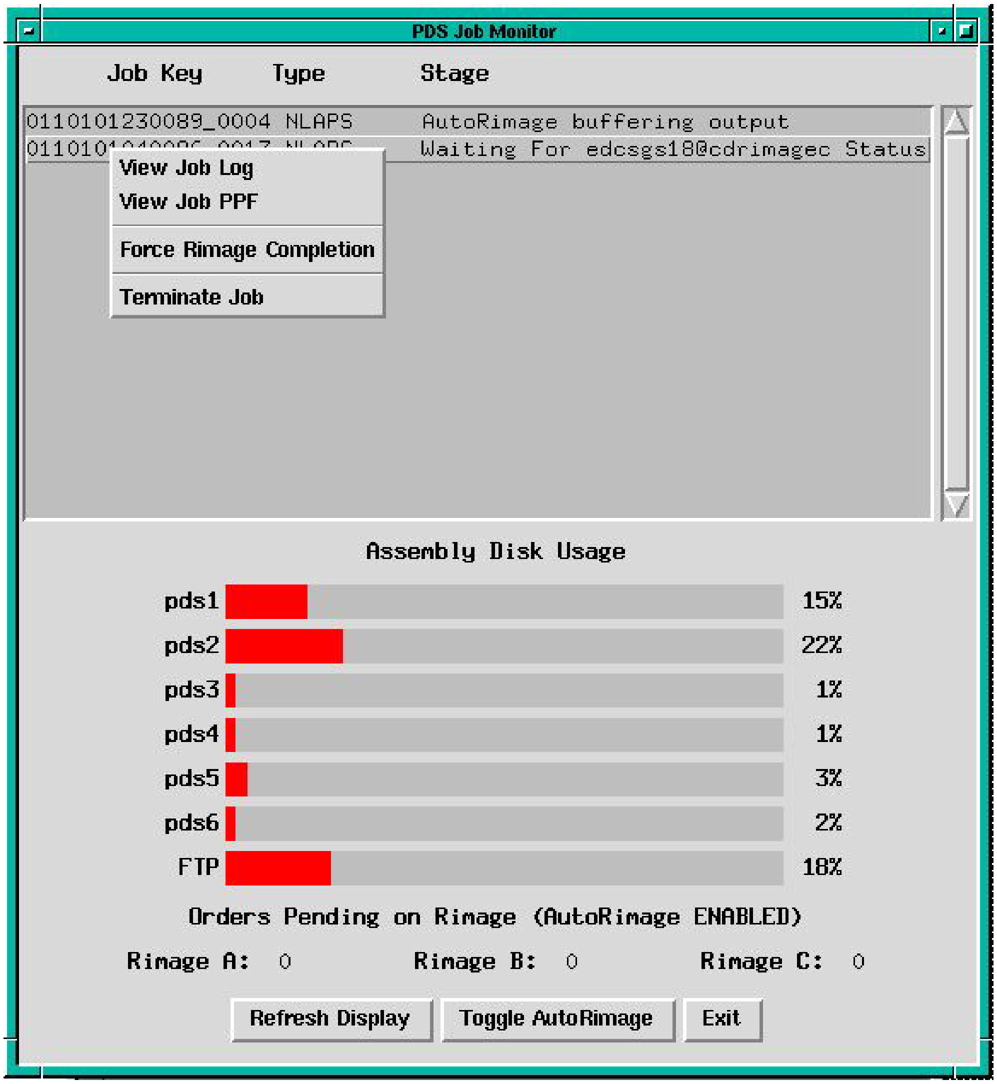
- **Query Only PDSINFO** – This button brings up the Query Only PDSINFO form, which allows for browsing of all PDS orders currently or historically in the system. This form, unlike most of the maintenance forms, is a "QUERY ONLY" type. With this form you can query the records in the PDT_PDSINFO table. These records can be viewed but not changed. An attempt to change fields using this form result in the message, "*Field is protected against update*".

- **Mass Update Pdsinfo** – This button brings up the Mass Update PDS form, which is used to make mass updates to the status of an order. Use this form to change the status of a number of units within an order. To change one or two units, use the PDSINFO Table Maintenance form.

- **ReStage Job** – This button brings up the Reset Stage Units to Q Status screen. This bottom is used to reset previously completed units to a "Q" status and no longer show up on the PDSOI. This form deletes units from the table PWT_PDS_WORK_TBL if they are still there, and the units are reinserted with values from the table PDT_PDSINFO and the status in the PDT_PDS_WORK_TBL are reset to a "Q" state. The units do not show up immediately on the PDSOI, but show up after the job_build Oracle procedure, "cron", has run. This could take up to 15 minutes.

4.10.5.2.4 PDS Job Monitor (PDSJM)

While the PDSOI provides a mechanism for operators to start and complete jobs, and to separate active from inactive jobs, it does not reveal a lot of detail as to the status of running jobs. Furthermore, it does not provide much information about the status of the PDS environment as a whole. This information is often useful, and sometimes crucial. To obtain this information, PDSSA provides the PDS Job Monitor user interface. On invoking the startup script for the Job Monitor, the Main Screen in Figure 4.10.5-5 comes up.



```
0110101230089_0004 NLAPS     AutoRimage buffering output
0110101                      Waiting For edcsgs18@cdrimagec Status
```

Orders Pending on Rimage (AutoRimage ENABLED)

Rimage A: 0　　Rimage B: 0　　Rimage C: 0

Figure 4.10.5-5. PDS Job Monitor Main Screen

The PDS Job Monitor is intended to complement the PDSOI. It lists running PDS jobs and displays the specific stage of each job. It also displays detailed information about each job on request. Additionally, it displays information about available disk space and workload on the Rimage CD generation systems.

The Job Monitor can be used to verify consistency between the jobs the PDSOI reports as being active and the jobs actually active. For instance, if the PDS machine crashes and is brought back up, when the Operator Interface window is started, all jobs active at the time of the crash still show up in an active state (even though none of them are actually running.) Under normal operation, the number of active jobs in the PDSOI should match the number of active jobs in the Job Monitor. If any discrepancies occur, they can be easily spotted through a comparison of the contents of the two windows.

4.10.5.3 Required Operating Environment

The required operating environment for PDSSA is described in detail in the PDSSA User Guide document.

4.10.5.3.1 Interfaces and Data Types

PDSSA interfaces with the PDS Information Server developed by ECS to allow interaction in support of product generation, distribution and progress monitoring.

4.10.5.4 Databases

The PDSSA uses the Oracle database. A full description of the table structure is described in detail in the PDSSA User Guide document.

4.10.5.5 Special Constraints

None.

4.10.5.6 Outputs

The PDSSA user interface supports interactions with operations staff in support of routine distribution activities, maintaining the database, controlling the distribution process, and monitoring and controlling detailed distribution job status.

4.10.5.7 Event and Error Messages

A description of the event and error messages generated by the PDS user interface is described in the PDSSA User Guide document.

4.10.5.8 Reports

The reporting capabilities supported by the PDS user interface are described in the PDSSA User Guide document.